

GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.

IRRIGATION OPERATIONS OF FASL RABI, N. W. PROVINCES, 1881, UP TO 28th FEBRUARY 1881.

CANAL DIVISION	WATER DISTRIBUTED DURING FEBRUARY 1881.				Total area of irrigation during current year.	Total area for the corresponding period of last year.	LAND IRRIGATED (APPROXIMATE).										RAIN-FALL.		REMARKS.
	Full supply.	Actual average throughout.	Allocated discharge.	Actual average throughout.			KILL.	Wheat.	Barley.	Gram.	Other food-grains.	Miscellaneous.	Total.	Total from 1st October 1880 to 28th February 1881.	Average of ten previous years for the same period.				
GANGES	NORTHERN.	10.00	...	740	650	22,191	28,668	Saharanpur	37,200	832	223	378	3,190	41,823	1.2	4.7	Ganges and Lower Ganges Canals. Volume entering the Upper Canal by the Sultan aqueduct had been available, another 20,000 acres could have been irrigated, as the demand was great.	Cubic feet per second. 5,569 2,907 8,300	
		6.80	...	700	850	43,839	42,510	Muzaffarnagar	59,674	1,068	1,142	1,035	1,734	64,653	1.6	3.5			
		8.30	...	969	820	52,507	69,736	Meerut	92,959	4,374	1,789	4,804	1,528	105,451	1.0	3.4			
		7.35	...	972	800	80,618	84,215	Bulandshahr	68,816	13,745	913	12,795	2,060	98,352	1.8	2.5			
		5.50	...	994	900	123,023	101,384	Aligarh	46,713	27,025	1,850	7,238	3,123	85,949	1.2	2.3			
LOWER GANGES	Narora	216	14,205	12,800	Agra	9,812	2,996	2,757	7,289	3,399	25,253	4	1.6	This large loss is reported to be under inquiry. Executive Engineer, Bulandshahr Division reports that if more water had been available, another 20,000 acres could have been irrigated, as the demand was great.	Net consumption 1,831 6,435	
		6.20	...	...	466	51,349	13,270	Maunpuri	45,348	34,544	1,807	3,368	3,971	89,038	1.0	2.0	
		4.80	...	771	685	102,775	98,914	Fatehgarh	15,271	14,937	345	1,217	4,158	35,928	5	2.4			
		...	...	...	403	151,291	130,291	Etawah	41,862	54,471	1,034	650	5,756	103,773	6	1.3
		...	...	...	...	36,250	...	Cawnpore	35,277	61,017	1,308	4,710	8,132	110,444	5	3.0
TOTAL GANGES AND LOWER GANGES CANALS	Eastern Jumna Canal	Delhi	39	51	19	129	113	351	1.5	2.8	Agra Canal— Entering canal Tail escape Kham Jara Net consumption 689 876 133 741 197 141 127	689 876 133 741 197 141 127	
		...	...	...	6,435	678,228	531,788	Gurgaon	3,863	1,326	4,807	2,643	14,978	27,617	1.0	2.9
		...	...	...	...	...	Dehra Dun	4,988	93	...	197	450	5,698	2.4	6.7	
		...	...	...	...	...	Bijnor	1,236	92	55	266	752	2,401	1.2	3.5	
		...	...	...	...	...	Tarai	4,460	63	...	312	...	4,835	1.1	3.6	
Agra Canal	Rohilkhand	1,250	869	110,062	129,087	Pilibhit	2,438	49	...	426	...	3,113	2.0	3.7	Agra Canal— Entering canal Tail escape Kham Jara Net consumption 689 876 133 741 197 141 127	689 876 133 741 197 141 127	
		...	...	2,000	741	94,640	33,148	Bareilly	20,198	858	...	3,182	...	24,238	1.4	3.2	
		...	...	...	407	32,186	57,686	Jhansi	41	18	86	22	23	190	1.7	1.2
		...	...	...	127	5,638	7,131	Hamirpur	14	...	...	427	1	432	3	1.7
	
TOTAL OF EACH DISTRICT	TOTAL OF EACH DISTRICT	923,807	761,542	TOTAL FOR THE SAME PERIOD LAST YEAR	473,124	188,161	10,532	52,578	37,147	761,542	Executive Engineer reports that there was a fair demand for rain in early part of the month, and lately for sugar pahn.	Net consumption 439 33 407	
				
	
	
	

Executive Engineer reports that there was a fair demand for rabi in early part of the month, and lately for sugar cane.

Superintending Engineer reports that this large loss is under enquiry.

ALLAHABAD, }
The 24th March 1881.

G. H. D. WALKER,
Asst. Secy. to Govt., N. W. P. & Oudh,
P. W. D., Irrigation Branch.

STATEMENT OF TRAFFIC ON THE GANGES AND AGRA CANALS FOR THE MONTH OF FEBRUARY 1881.

NAMES OF TRAFFIC.	GANGES CANAL.										AGRA CANAL.										REMARKS.
	PRINCIPAL ITEMS OF TRAFFIC.										PRINCIPAL ITEMS OF TRAFFIC.										
	UP.					DOWN.					UP.					DOWN.					
	Maunder.	Number.	Maunder.	Number.	Total Up and Down.	Maunder.	Number.	Maunder.	Number.	Total Up and Down.	Maunder.	Number.	Maunder.	Number.	Total Up and Down.	Maunder.	Number.	Total Up and Down.			
Grains.																					
Wheat	7,206	...	2,137	...	9,343	...	...	1,033	...	1,033	...	...	...	...	1,033	...	...	1,033
Gram	2,147	...	...	...	2,147	...	...	724	...	724	...	...	...	...	724	...	...	724
Rice	2,365	...	...	...	2,365	...	...	...	...	...	50	...	...	...	50	...	...	50
Paddy or dhán	3,583	...	...	...	3,583	...	...	...	...	...	...	...	...	...	...	...	...	...
Bijhar or mixed grain	1,009	...	200	...	1,209	...	...	...	...	...	...	...	...	...	...	...	...	...
Dál	168	...	6,555	...	6,723	...	...	...	...	...	...	...	...	...	...	...	...	...
Juár	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Báira	2,290	...	...	...	2,290	...	...	...	...	...	...	...	...	...	...	...	...	...
Maize or Indian-corn	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Barley	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL	19,368	...	8,892	...	28,260	...	...	12,125	...	12,125	50	...	...	...	12,175	...	...	...
Cotton	...	...	4,430	...	4,430	...	...	1,215	...	1,215	...	...	...	...	1,215	...	...	...
Oil-seeds	...	...	276	...	276	...	...	375	...	375	...	...	...	...	375	...	...	...
Salt	5	...	23,424	...	23,424	...	...	...	...	...	50	...	...	...	50	...	...	...
Metals	6,830	...	18,03	...	24,860	...	...	...	...	...	...	...	...	...	...	...	...	...
Building materials	37,950	...	26,561	...	64,511	...	...	13,035	...	13,035	...	...	...	...	13,035	...	...	...
Miscellaneous goods	28,134	...	19,196	...	47,330	...	...	2,690	...	2,690	...	...	...	...	3,927	...	...	...
Firewood	650	...	15,190	...	15,840	...	...	1,675	...	1,675	...	...	...	...	1,675	...	...	...
Bamboos	30	...	289,000	...	289,030	...	...	...	...	...	...	...	...	...	...	...	...	...
Timber	715	...	13,880	...	14,595	...	...	700	...	700	...	...	...	...	...	...	...	...
Miscellaneous timber	...	...	890	...	890	...	...	...	...	...	...	...	...	...	...	...	...	...
Live stock	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
GRAND TOTAL	93,682	1,182	126,463	254,468	220,145	255,648	17,500	15,652	...	...	17,500	...	...	...	33,152	...	...	...
Total during corresponding period of last year	31,268	1,148	121,241	165,296	152,509	166,444	19,450*	6,909	...	...	19,450*	...	...	...	26,359	...	...	...
Increase	62,414	34	5,222	89,170	67,636	89,204	...	8,743	...	...	...	...	...	...	6,793	...	...	...
Decrease	...	...	...	...	...	...	1,950	...	...	...	1,950	...	...	...	...	...	...	...

NOTE.—In the traffic statement for January, 1881, under *Ganges Canal*, in columns 3 and 4, headed "Up" and "Down," the figures 32,367 and 47,916, read 32,157 and 47,916. In the same columns under "Total" for the figures 32,367 and 47,916, read 32,157 and 47,916. In the same columns under "Grand Total" for the figures 90,934 and 210,154, read 91,764 and 210,965; and in the same columns under "Increase" for 33,392 and 23,667, read 30,122 and 24,497 respectively.

ALLAHABAD,
The 24th March 1881.

G. H. D. WALKER,
Asst. Secy. to Govt., N. W. P. & Oudh, P. W. D., I. B.

PARTICULARS.	Ganges Canal.		Agra Canal.	
	1880.	1881.	1880.	1881.
Tonnage, including weight of timber and boats	5,649	8,154	941	1,194
Ten mileage	470,469	918,784	93,651	131,914
Value of goods	Rs. 7,61,718	3,72,801	21,337	54,427
Number of passengers	28	34	...	...

GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.
IRRIGATION BRANCH.

IRRIGATION OPERATIONS IN BENGAL FOR 1880-81.

Areas leased for Irrigation up to end of February 1881.

[illegible]

(c) Includes three-year lease, 1,000 sq. ft.

(c) (b) Five-year leases.

C. TAYLOR,
Asst. Secy. to the Govt. of Bengal,
P. W. Dept., Irrigation Branch.

The 19th April 1881.

GOVERNMENT OF INDIA.

HOME, REVENUE AND AGRICULTURAL DEPARTMENT.

REPORTS ON THE STATE OF THE SEASON AND PROSPECTS OF THE CROPS FOR
THE WEEK ENDING THE 3rd MAY 1881.

GENERAL REMARKS.—There was heavy rain in Assam, and showers fell during the week in many districts of Southern India and in some parts of the Punjab and British Burma. With the exception of a slight fall in one district of Bengal, no rain is reported from other provinces. In part of Mysore and in most districts of Bengal some wet weather would do good. In the Punjab the spring crop is being harvested with a fair outturn, and prices have fallen. Small-pox is still reported from a considerable number of places, principally in the Central and North-Western Provinces, Bengal, the Bombay Presidency, and Madras. Cattle-disease continues in the Alwar State, and is to a greater or less extent prevalent in one or more districts of Bengal, the North-Western Provinces, the Central Provinces, Mysore, British Burma, and Assam. Agricultural prospects remain satisfactory on the whole.

Presidency or Province and District.	Rainfall for week preceding.	State of agricultural prospects.
Madras—(May 4th)		
Bellary ...	·47 (average of four stations).	Standing crops generally good; harvest wet and dry crops, yield average; paddy, sugarcane, and indigo being sown; fever in parts.
Kurnool ...	·10 (one station)	Harvest dry crops in parts, yield above average; preparations for new season progressing; cattle-disease in parts.
Ganjam ...	.....	Second crop, paddy and <i>ragi</i> , flourishing.
Kistna ...	.....	Small-pox and measles in parts.
Chingleput (Madras) ...	.....	Crops generally good; harvest paddy and <i>ragi</i> ; cultivation operations for new season progressing; fever in parts; small-pox and cattle-disease more general.
Coimbatore ...	·46 (average of three stations).	Paddy withering in parts, standing crops otherwise fair; harvest wet and dry crops, outturn about average.
Tanjore ...	.....	Standing crops good; harvest dry crops, outturn average.
Madura ...	·25 (one station)	Harvest paddy in parts, yield average; standing crops drooping.
Malabar ...	·79 (average of six stations).	Sowing first crop, new season, delayed for want of rain; small-pox in parts.
Travancore ...	·81	Preparations for paddy cultivation progressing; fever prevails to some extent.
Bombay—(May 4th)		
Kurrachee ...	Nil	<i>Rabi</i> harvesting and <i>batai</i> in progress, estimated average outturn of crop three annas in the rupee less than last year; small-pox in Dadu 14 cases, in Sehwan 10, and in Sakro 2; wheat, red rice, and unhusked <i>bajri</i> in Kurrachee 11, 18 and 17, in Ghorabari 9, 19 and 21, in Shahbandar 8, 20 and 20, in Mirpur Batoro 9½, 24 and 26, and in Sujawal 9, 21 and 26 seers respectively.
Hyderabad ...	Nil	<i>Rabi</i> harvesting nearly over; <i>kharif</i> operations commenced in some parts of the district; small-pox and fever in six, measles in three, and cattle-disease in two talukas; river rising; weather warm, but seasonable; wheat 11½, <i>bajri</i> 20, <i>jowari</i> 20½, red rice 14, and white rice 9 seers per rupee.
Ahmedabad ...	.....	Manuring operations for next season commenced in some talukas; one case of cholera on the 30th in Sanand; wheat 35 and <i>bajri</i> 53.
Baroda ...	.....	Crops in good condition; public health good; prices rising; <i>bajri</i> 43 and common rice 26 lbs. per rupee.
Surat ...	.....	<i>Rabi</i> nearly harvested; fever in three talukas; <i>jowari</i> 43 and <i>nagli</i> 30 lbs.
Nasik ...	.....	<i>Rabi</i> threshing continues in places; fever in three talukas; <i>bajri</i> 41, <i>jowari</i> 53, and wheat 35.
Colaba (Bombay) ...	.....	Abnormal temperature 1° warm on 27th, 2° warm on 28th; fell to nil on 1st, and rose again to 1° warm on 3rd; vapour in air in excess of normal from 27th to 29th, normal on the remaining days of the week; abnormal wind northerly on 27th and 3rd, southerly on 29th, and nil on all other days.
Poona ...	.....	Average prices— <i>bajri</i> 46 and <i>jowari</i> 65 lbs.; in Poona— <i>bajri</i> 46 and <i>jowari</i> 57 lbs.
Ahmednagar ...	.....	Cattle-disease in Karjat and Jamkhed; <i>bajri</i> —maximum 72 lbs. in Jamkhed, minimum 51 in Kopergaon; <i>jowari</i> —maximum 96 in Jamkhed, minimum 58 in Karjat.
Sholapur ...	·19	Total 70; <i>jowari</i> 83-15 and <i>bajri</i> 65-16.
Dharwar ...	Slight rain in four talukas.	Late crops almost harvested; cotton picking almost completed; fields being prepared for early crops; rice 33 and <i>jowari</i> 98 lbs.; slight fever in three and cattle-disease in eight talukas.

Presidency or Province and District.	Rainfall for week preceding.	State of agricultural prospects.
Bombay—contd.		
Kanara ...	1.50 in Supa	Second crop harvest completed in Karwar, but continues in other talukas; cattle-disease prevalent; common rice in Karwar 16, in district 16½ seers.
Rajkot ...	.....	Weather very hot; health generally good, small-pox prevailing in Jetpur taluka; <i>bajri</i> 48 and <i>jowari</i> 66 lbs.
		<i>General Remarks.</i> —Slight rain throughout south of Presidency; preparations being made in many districts for monsoon crop; prices generally steady, with downward tendency; public health fair.
Bengal—(May 8rd)		
Chittagong ...	<i>Nil</i>	Weather warm; prospects of crops good; cattle-disease and small-pox not abated; prices stationary.
Dacca ...	<i>Nil</i>	Outturn of <i>kalai</i> , mustard, tobacco, <i>cheena</i> , <i>boro</i> paddy about average; prospects of spring crops good.
24-Pergunnahs ...	<i>Nil</i>	Land being ploughed for early rice and <i>jute</i> ; rain wanted in some places; no crops on the ground, except <i>boro</i> ; seedbug in Satkhira; cholera still prevails in Diamond Harbour, Saikhira, and a few places at head-quarters; common rice at head-quarters 16 to 20 seers, and in sub-divisions 20 to 26 seers.
Moorshedabad ...	<i>Nil</i>	Prospects of crops continue good; want of rain prevents preparation of land for <i>aus</i> sowings in some places; fever and cholera prevail here and there; small-pox very rife in and near Berhampore.
Rajshahye ...	<i>Nil</i>	Weather extremely hot; <i>boro</i> paddy thriving; sowing of <i>aman</i> and <i>aus</i> still going on; more rain wanted; cholera still prevails, but abating; prices unchanged.
Burdwan ...	<i>Nil</i>	Weather very hot; rain much wanted; cholera still prevalent.
Rungpore ...	<i>Nil</i>	Weather cloudy and hot; crops good; cholera still prevalent.
Bhagalpur ...	9	Small-pox and cholera prevalent; rice 14 seers.
Purneah ...	<i>Nil</i>	Prospects of crops fair, but rain wanted; ploughing and sowing still going on; health fair, but fever bad in old cases, and cholera in some places; rivers very low; rice 28 seers.
Patna ...	<i>Nil</i>	Threshing of <i>rabi</i> nearly complete, outturn good.
Durbhunga ...	<i>Nil</i>	Threshing operations nearly over; <i>moong</i> , <i>dhan</i> , sugarcane, and indigo promising; fields being prepared for <i>bhadai</i> ; general health good; prices stationary.
Hazaribagh ...	<i>Nil</i>	Weather seasonable; prospects of crops continue good; mango and almonds a failure; production of <i>mohra</i> somewhat better than the former; general health good; rice 23 seers.
Cuttack ...	<i>Nil</i>	Weather very hot; ploughing still in progress; small-pox and cholera prevail.
		<i>General Remarks.</i> —Weather very hot; some rain in a few districts during week; rain wanted in most districts for standing crops and for ploughing and sowing; prospects continue good; harvesting of <i>rabi</i> still going on with good results; <i>boro dhan</i> , <i>dalu</i> paddy, <i>cheena</i> , and cotton being collected in places; cholera generally prevalent; small-pox in some districts; prices easy.
N. W. Provinces and Oudh—		
Benares (May 4th)	<i>Nil</i>	Weather seasonable; sugarcane planting going on; sporadic cholera in city and Dehat Amnat; slight small-pox in tahsil Chandauli; supplies plentiful; prices falling.
Allahabad (" ")	<i>Nil</i>	Weather seasonable; all prices slightly risen; cholera, small-pox, and measles still in district, but not increasing; wheat 20, barley 17, gram 25½, coarse cleaned rice 14½, unhusked rice 25, <i>bajra</i> 25, and peas 27½ seers.
Gorakhpur ( " " )	.....	Hot winds; threshing still going on; small-pox here and there in three tahsils; sporadic instances of cholera in five tahsils; otherwise health fair; prices fair; markets well supplied.
Jhansi ( " " )	.....	Markets well stocked; prices rising; wheat 22½, gram 26½, <i>bajra</i> 26 seers; health generally good; fodder scarce; cattle-disease continues.
Agra (" ")	<i>Nil</i>	Wheat 20, gram 20, barley 23, <i>bajra</i> 23, <i>makka</i> 28 seers.
Bareilly (" ")	<i>Nil</i>	Weather seasonable; markets steady; wheat 21, barley 29½, <i>bajra</i> 23, common rice 15, gram 20½ seers per rupee.
Meerut ( " " )	.....	Weather fine; nights unseasonably cool; two cases of cholera, one fatal; health otherwise good; cheapest wheat 22½, gram 23, barley 31, <i>bajra</i> 20, <i>juar</i> 22, <i>arhar</i> 25 seers.
Kumaun ( " " )	.....	Weather fine; crops good; harvest progressing; health fair; some murrain and foot rot still; prices stationary.
Lucknow (" ")	<i>Nil</i>	<i>Rabi</i> grain in the market; cattle-disease continues bad in Mohanlal-ganj.
Partabgarh (" 3rd)	.....	Heat increasing; cholera severe in Patti.
Sitapur (" 4th)	<i>Nil</i>	Weather seasonable; <i>rabi</i> outturn poor; health good; wheat 23, barley 32, gram 24 seers.
Fyzabad (" ")	<i>Nil</i>	Wind continues westerly and dry; prices—wheat 20 to 21, barley 32 to 34, gram 23 to 27, rice 13 to 16 seers; cholera spreading westwards and still severe.

Presidency or Province and District.	Rainfall for week preceding.	State of agricultural prospects.
N. W. Provinces and Oudh—contd.		
Rae Bareilly (May 3rd)	<i>Nil</i>	Hot wind blowing; labourers fully employed; works not wanted yet; prices rising; wheat 20½, barley 25, <i>dhan</i> 24½, <i>arhar</i> 27½ seers.
Aligarh (" 4th)	.....	Dust-storm has cooled the air; crops all out; indigo sowing progressing; fever reported in Atrauli tahsil; wheat 21, <i>barley</i> 26, <i>bejhar</i> 25, gram 22 seers.
Cawnpore (" ")	<i>Nil</i>	Yield of irrigated crops fair; prices slightly risen; small-pox decreasing; markets plentifully supplied; wheat 21, barley 27, <i>bajra</i> 26, <i>juar</i> 29 seers.
Moradabad (" ")	<i>Nil</i>	Weather seasonable; prices of barley, <i>makka</i> , and <i>bajra</i> have risen; export in the direction of Agra continues; three deaths from cholera reported in Amroha in beginning of week; none since.
Saharanpur ( " " )	.....	Days warm, nights cool; <i>rabi</i> nearly harvested; threshing going on; wheat 20½, gram 22, barley 30½, rice 16½, <i>juar</i> 21½, <i>bajra</i> 19½, <i>urd</i> 23, <i>makka</i> 23½, <i>bejhar</i> 22 seers.
Farakhabad ( " " )	.....	Weather fair, wind west; crops all harvested, outturn moderate; slight disease among cattle, but decreasing; health fair, only fever and small-pox prevalent; prices—wheat 20½, barley 26½, gram 22½, <i>bajra</i> 30, rice 18½ seers.
General Remarks. —No rain; weather seasonable; prices rising slightly; exports continue from Moradabad towards Agra; cholera continues in eastern districts and is still severe in parts of Fyzabad and Partabgarh; a few cases in Moradabad and Meerut; small-pox continues in Farakhabad, Benares and Allahabad, but is decreasing in Cawnpore; fever in Aligarh and Farakhabad; cattle-disease continues in Kumaun, Lucknow, Farakhabad, and Jhansi.		
Punjab—(May 3rd)—		
Delhi	.....	Harvesting in progress; prices have a downward tendency; health fair.
Hissar	.....	Weather seasonable; prices falling; health reports good.
Umballa	.....	Cutting of crops in progress, yield good; health fair.
Jullundur	.....	Reaping commenced; prices steady; health reports good.
Lahore	Slight shower	Crops good; prices have a downward tendency.
Ferozepore	.....	Crops being cut; prices falling.
Siālkot	.....	Prices falling.
Rāwalpindi	.....	Reaping of crops commenced; prices steady.
Peshawar	.....	Harvest prospects fairly good; prices tending downwards.
Mooltan	.....	Harvesting in progress; prices tending downwards; health reports good.
Dera Ismail Khan	.....	Harvesting in progress; prices falling.
General Remarks. —Harvest prospects throughout the Province good, and a fair outturn has led to a general lowering of prices.		
Central Provinces—		
Nagpur (May 4th)	.....	Hot; harvest completed; health good; prices continue easy.
Jubbulpore ( " " )	.....	Hot; threshing and winnowing progressing; cholera reported; wheat 25 and rice 14 seers.
Saugor ( " " )	.....	Winnowing operations continue; small-pox and cholera reported; prices easy.
Seoni ( " " )	.....	<i>Rabi</i> being threshed and winnowed; cattle-disease continues; health good; wheat 27 seers.
Hoshangabad ( " " )	.....	Hot; threshing in progress; small-pox prevalent; wheat 18 seers.
Raipur (April 30th)	.....	Hot; ploughing for <i>kharij</i> in progress; cattle-disease in some parts; health good; rice 36 seers.
Sambalpur (" 28th)	.....	Close and hot; cholera in some parts; rice 48 seers.
General Remarks. —Weather hot, but nights cool; <i>rabi</i> harvest almost completed; threshing and winnowing in progress; cholera and small-pox reported in some districts; public health generally good; cattle-disease prevalent in five districts; prices easy.		
British Burma—(April 30th)—		
Akyab	<i>Nil</i>	Total rainfall .66; small-pox continues to a slight extent in town, otherwise public health good; cattle-disease in three townships.
Rangoon	.....	A few fatal cases of small-pox, otherwise public health good.
Bassein	<i>Nil</i>	Total rainfall .02; slight small-pox in one township, otherwise public health good; cattle-disease in one township.
Prome	<i>Nil</i>	Total rainfall .91; public health good.
Amherst (Moulmein)	<i>Nil</i>	Total rainfall 1.25; a few cases of cholera in Moulmein and in one township of district, otherwise public health good.
Toungoo	<i>Nil</i>	Total rainfall .89; public health good.
General Remarks. —Slight small-pox in Akyab and four districts of Pegu; some cholera in Henzada, Thayetmyo, and Amherst, otherwise public health good; cattle-disease somewhat prevalent in Akyab, Thongwa, and Bassein.		

Presidency or Province and District.	Rainfall for week preceding.	State of agricultural prospects.
Assam—(May 4th)—		
Gaubati ...	1.64	Weather seasonable; heavy rain and storms on the nights of the 2nd and 3rd; fever and dysentery in Barpeta; sowing of <i>asa</i> in progress.
Sylhet ...	2.18	<i>Boro</i> paddy a fair average; crop cultivation and sowing of <i>amua</i> paddy proceeding; severe storms.
Cachar ...	<i>Nil</i>	Weather warm; 8,671 deaths reported to date from cattle-disease; sowing of <i>asa</i> crop commenced; common rice 20 seers per rupee; health good.
Dibrugarh ...	6.88	Weather stormy and rainy; some damage by water to <i>aku</i> crops; small-pox at North Lakhimpur, disappearing Tinkung, and healthy.
Mysore and Coorg— (May 4th)		
Bangalore ...	.....	Crops in good condition, but withering in parts of Kolar district, where want of water is being felt; elsewhere prospects fair; fever and small-pox in parts, also murrain among cattle; prices stationary. Prospects of <i>vaisakh</i> crop and coffee continue good.
Mysore ...	.9	
Mercara ...	.15	
Berar & Hyderabad— (May 4th)		
Amroha ...	.....	Land being prepared for next crop; wheat 20 and <i>jowari</i> 33 seers. Weather warm; ploughing operations progressing. <i>Tubi</i> crops prospering, except in some places for want of water; preparation for <i>kharif</i> crops commenced; small-pox prevails in a few places; prices—coarse rice 9½, wheat 14½, yellow <i>jowari</i> 24, <i>bajra</i> 24, and <i>luchna</i> 31 seers per current sicca rupee.
Akola ...	.....
Hyderabad ...	.....
Central India States— (May 4th)		
Indore ...	.....	Nights cool, days generally cloudy; <i>rabi</i> harvest reaped; health good.
Morar (Gwalior) ...	.....	Weather seasonable; health good.
Sutna ...	.....	Health good; wells dry.
Rutlam ...	.....	Small-pox continues.
Neemuch ...	<i>Nil</i>	No small-pox in cantonment, but cases reported in districts.
Goona ...	.....	Harvest good; prices easy; health good.
Bhopal ...	.....	Public health generally good; some cases of chicken-pox.
Agar ...	.....	Prospects favourable.
Nowgong ...	<i>Nil</i>	Health fair.
Manpur ...	.....	Weather hot; small-pox prevalent.
Rajputana—		
Abu (May 4th) ...	.....	Getting warmer.
Sirohee (" 1st) ...	.....	Tanks and wells good; healthy; hot.
Murwar (April 29th) ...	.....	Tanks dry; wells resorted to, but water going lower daily; health good; heat moderate owing to heavy showers in districts; prices rising.
Meywar (" " ) ...	.....	Tanks, wells, health, and crops good; five cholera cases at Chittore.
Harowtee (" 30th) ...	.....	Small-pox abating; seasonable; water low.
Jhallawar (" 28th) ...	.....	Seasonable; small-pox in Shahabad district.
Ajmere (May 4th) ...	.....	Seasonable; high winds; cool; health good.
Jeypore (" " ) ...	.....	Seasonable; health good.
Ulwur (" 3rd) ...	.....	Chest and cattle diseases continue; cotton being sown; wells falling.
Nepal (April 26th)—		
Katmandu ...	<i>Nil</i>	Hot west winds for the last three days, very unusual in the Katmandu valley.

C. GRANT,
Offg. Secy. to the Govt. of India.



SUPPLEMENT TO The Gazette of India.

No 20. } CALCUTTA, SATURDAY, MAY 14, 1881.

OFFICIAL PAPERS.

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GOVERNMENT OF INDIA. PUBLIC WORKS DEPARTMENT.

No. XV of 1881.

APPROXIMATE STATEMENT OF GROSS RECEIPTS AND EXPENSES OF INDIAN RAILWAYS.

		RECEIPTS FOR WEEK ENDING 15TH APRIL 1880.		RECEIPTS FOR WEEK ENDING 16TH APRIL 1881.		TOTAL RECEIPTS FROM 1ST APRIL 1880 TO 17TH APRIL 1880.		TOTAL RECEIPTS FROM 1ST APRIL 1881 TO 16TH APRIL 1881.		Total Increase in 1881-82.	Total Decrease in 1881-82.
Latest return received.	Railways.	Total.	Per mile open.	Total.	Per mile open.	Total.	Per mile open per week.	Total.	Per mile open per week.		
Guaranteed.											
23rd April 1881	East Indian	Rs. 3,71,452	Rs. 580	Rs. 7,85,326	521	Rs. 20,85,053	570	Rs. 19,05,870	553	Rs.	Rs.
Ditto	Eastern Bengal	50,523	294	51,673	294	1,37,600	330	1,32,793	330	...	1,79,683
Ditto	Oudh and Rohilkhand	1,08,238	198	1,12,614	206	2,39,622	180	2,80,628	224	41,000	4,897
Ditto	Sind, Punjab & Delhi	2,86,019	423	1,87,428	277	6,91,044	421	4,81,282	311	...	2,09,762
16th ditto	Madras	1,20,508	140	88,358	103	3,20,942	154	2,49,125	127	...	71,817
Ditto	South Indian	67,163	106	70,521	108	1,84,692	107	1,59,236	106	...	5,456
23rd ditto	Great Indian Peninsula	6,54,124	452	8,14,180	562	14,41,520	408	17,15,635	518	2,74,115	...
Ditto	Bombay, Baroda and Central India	2,28,125	514	2,85,927	644	5,17,984	480	6,23,702	615	1,05,708	...
	TOTAL	23,89,152	380	23,96,027	380	55,98,497	367	55,47,771	385	...	50,726
State.											
23rd April 1881	Calcutta and South- Eastern	2,175	78	2,452	88	5,510	81	5,816	91	308	...
16th ditto	Nalhati	1,329	49	1,162	43	3,173	48	2,673	42	...	500
23rd ditto	Northern Bengal	20,256	82	27,410	103	58,908	105	65,880	125	6,972	...
16th ditto	Tirhoot	11,024	134	11,693	142	27,088	136	23,958	154	1,870	...
Ditto	Patna-Gya	10,687	187	10,992	193	25,643	185	25,303	194	...	340
23rd ditto	Muttia-Hathras	2,145	74	2,118	73	5,600	79	5,373	81	...	227
	Dhond and Mahmud (a)	...	...	...	...	...	...	...	...	...	...
23rd April 1881	Wardha Coal	3,316	74	8,401	187	7,076	65	18,360	178	14,284	...
Ditto	Nagpur & Chhattisgarh	2,209	42	6,658	101	(c) 3,825	42	13,854	92	10,029	...
16th ditto	Rangoon and Irrawad- dy Valley	35,859	223	36,083	224	84,673	217	98,439	267	13,766	...
23rd ditto	Sindia (Northern Sec.)	2,221	60	1,924	52	5,258	58	5,371	63	118	...
16th ditto	Sindia (Southern Sec.)	1,414	43	2,975	90	3,117	39	9,525	107	6,408	...
Ditto	Rajputana	72,955	124	1,23,573	170	1,84,967	140	2,98,781	180	1,13,814	...
	Western Rajputana (Southern Section) (b)	...	...	...	...	...	...	...	...	...	...
23rd April 1881	Holkar and Sindia- Nemuch	26,940	121	41,900	145	60,806	115	69,545	136	28,739	...
2nd April 1881	Punjab Northern	71,194	421	(d) ...	...	2,03,240	487	(e) 21,637	266	...	1,81,603
23rd ditto	Indus Valley and Kan- dahar	76,214	150	92,075	134	3,16,947	256	1,91,950	131	...	1,24,967
	Khamgaon (a)	...	...	...	...	...	...	...	...	...	...
	Ahmadli (a)	...	...	...	...	...	...	...	...	...	...
9th April 1881	Nizam's	16,032	132	(d) ...	...	34,202	116	(f) 16,324	105	...	17,878
23rd ditto	Cawnpore-Farukhabad	...	...	6,281	73	...	...	12,789	65	12,789	...
16th ditto	Bhavnagar-Gondal	...	...	23,963	124	...	...	48,518	111	48,518	...
23rd ditto	Mysore	...	...	1,572	27	...	...	4,592	35	4,592	...
16th ditto	Dildarnagar-Ghazipur.	...	...	647	71	...	...	1,835	67	1,835	...
	TOTAL	3,55,970	152	4,02,069	125	10,30,033	181	9,05,555	132	...	64,478
	GRAND TOTAL	27,45,122	318	27,98,096	294	66,28,530	316	65,13,326	290	...	1,15,204
	GROSS ESTIMATED EXPENSES	...	...	...	...	31,71,752	...	31,91,530	...	...	...
	NET RECEIPTS	...	...	...	...	34,56,778	165	33,21,796	163	...	1,34,982

(a) Included with Great Indian Peninsula Railway.

(b) Included with Rajputana Railway.

(c) Total receipts from 14th to 17th April 1880.

(d) Return not received.

(e) Total receipts for the first 2 days of April 1881.

(f) Total receipts for the first 2 days of April 1881.

GOVERNMENT
DEPARTMENT OF REVENUE

Prices Current of Food-grains throughout

PROVINCES.	DISTRICTS.	QUANTITIES PER RUPEE																	
		Wheat.			Barley.			Rice (best sort).			Rice (common).			Great Millet (Cenchrus Javanica, Penna Sorghum)			Buttermilk (M. 1880 Pentstemon)		
		Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.
		S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.
MAHARASHTRA.	Ganjam	11 18	11 13	10 5	...	...	...	17 13	17 5	13 13	19 8	19 2	15 14	...	...	...	...	...	...
	Vengalputam	15 0	15 0	10 0	...	...	...	15 11	13 6	14 10	18 2	15 13	16 6	25 14 32	6 25	14 29	11 32	11 32	11 32
	Gadchery.	11 11	11 11	9 0	...	...	...	...	11 14	17 13	20 0	17 0	20 0	31 10	...	28 13	...	...	...
	Ratna	13 14	13 11	7 13	...	...	...	19 6	19 6	19 6	20 2	20 2	20 2	28 2 28	...	...	...	...	...
	Nellore	13 8	10 0	7 3	...	...	...	13 14	14 13	13 14	15 0	16 0	15 0	23 13 28	13 26	14 26	230	6	6
	Chingapah	13 10	13 10	9 8	...	...	...	11 8	11 8	11 11	12 14	12 14	12 14	30 0 30	13 23	11 29	0 29	0	0
	Bellary	16 5	16 5	9 2	...	...	...	12 5	12 13	11 13	13 8	14 0	14 0	30 3 41	3 24	11 32	14 32	0	0
	Kurnool	12 11	12 11	7 10	...	...	...	11 0	11 0	11 6	11 6	11 6	11 13	35 10 35	10 26	0 34	5 33	11	11
	Mauras	8 13	8 13	7 8	...	...	...	13 11	14 3	11 0	14 14	15 2	12 6	23 0 23	0 20	3 23	0 23	2	2
	Chingolept	9 6	9 6	...	...	...	...	13 14	13 14	13 11	15 2	15 2	14 2	...	...	...	...	...	...
	North Arcot	11 0	11 0	8 0	...	...	...	16 13	16 13	13 2	17 5	17 5	14 8	22 11 22	11 18	3 31	5 31	5	5
	South Arcot	8 10	9 5	6 3	...	...	...	15 3	15 3	12 3	16 10	16 10	14 0	23 8 23	8 21	13 28	8 28	8	8
	Tanjore	9 8	9 8	6 3	...	...	...	17 6	17 10	15 13	...	...	...	33 6 34	14 28	10 31	14 31	14	14
	Trichinopoly	10 3	9 14	6 10	...	...	...	16 3	17 3	13 11	16 11	17 6	14 2	...	...	...	...	...	...
	Madurai	13 3	10 14	7 13	...	...	...	15 2	15 2	13 14	15 3	15 10	14 2	27 8 24	6	...	32 5 30	13	13
	Tinnevely	9 3	9 8	7 2	...	...	...	13 8	13 14	14 5	14 0	14 6	14 13	...	...	...	...	...	...
	Comblatore	14 13	14 13	9 13	...	...	...	15 5	15 11	12 2	15 13	16 5	13 2	29 10 31	5 18	5 37	0 37	6	6
	Nilgiris	9 14	9 14	7 2	...	...	...	11 3	10 6	9 10	12 0	11 3	10 0	20 13 20	13 16	3 20	5 20	5	5
	Salem	11 6	11 0	7 6	...	...	...	13 0	13 0	9 14	15 14	15 14	11 10	22 11 22	11 16	10 22	14 22	14	14
	South Canara	10 5	10 5	7 5	...	...	...	8 11	8 11	9 3	14 11	14 11	12 3	...	...	...	...	...	...
	Malabar	10 13	10 13	6 8	...	...	...	15 3	16 3	12 2	16 3	18 3	13 0	...	...	...	...	...	...
BOMBAY.	Bombay	11 4	11 4	8 9	19 2	18 0	16 14	7 4	7 11	6 7	10 12	10 15	10 7	21 5 21	5 16	14 16	1 19	8	8
	Ahmedabad	17 8	18 8	13 0	41 0	44 0	24 8	7 8	8 0	7 4	12 8	13 0	10 0	30 0 31	0 23	0 27	8 29	8	8
	Kana	16 3	14 9	12 5	40 0	40 0	26 10	9 6	9 6	8 14	14 9	14 9	11 13	32 0 32	0 21	0 24	10 24	10	10
	Surat	14 3	14 11	8 0	16 4	15 4	7 0	6 12	6 15	8 0	8 4	8 6	8 12	18 13 20	0 17	8 17	12 18	5	5
	Broach	16 13	16 13	13 5	...	...	...	8 14	8 14	8 0	11 6	11 6	10 0	20 0 20	0 17	14 18	13 18	13	13
	Tanna (Salsetty)	11 11	10 5	7 11	...	...	...	8 14	7 13	6 6	11 4	10 0	7 8	12 11 12	0 12	0 16	0 17	11	11
	Colaba (Alibag)	20 0	10 0	7 0	...	...	...	7 0	8 8	6 8	12 8	12 0	11 0	...	...	...	...	...	...
	Khandesh (Dhulia)	20 5	20 5	14 2	...	...	...	7 4	7 4	6 13	12 12	12 12	11 1	28 11 28	14 15	9 25	3 25	3	3
	Nasik	17 0	17 0	10 4	...	...	...	5 15	5 15	5 15	11 15	11 5	9 0	28 10 28	10 17	0 19	14 19	14	14
	Ahmednagar	18 0	19 2	11 0	...	...	...	8 7	8 6	6 15	11 8	11 8	8 2	33 12 32	12 14	14 27	4 25	5	5
	Poona	13 13	13 13	9 3	...	...	...	9 13	9 13	8 9	10 4	12 4	9 13	26 2 26	2 16	4 20	11 20	11	11
	Sholapur	17 11	18 2	11 5	...	...	...	10 15	10 15	10 0	11 13	11 13	10 6	34 8 33	10 17	11 22	10 34	14	14
	Bulandi (Bagalkot)	18 11	17 13	9 8	14 0	12 4	13 10	8 0	7 14	7 9	10 0	10 4	9 12	41 0 40	3 22	4 23	5 23	13	13
	Betwa	13 6	13 6	9 0	...	...	...	9 6	9 2	6 14	11 7	11 1	7 14	26 10 25	5 11	13 23	3 23	13	13
	Bejgaon	20 0	16 8	8 0	11 8	12 0	11 8	11 8	11 8	9 8	12 0	12 0	10 8	29 0 28	0 17	8 22	0 22	0	0
	Dharwar (Hubli)	24 0	24 0	9 0	...	...	...	14 0	14 0	11 0	17 0	17 0	10 8	43 0 43	0 22	0 22	0 22	0	0
	Katnagiri	11 3	11 3	7 4	...	...	...	8 9	9 4	7 13	14 2	14 2	10 10	18 3 18	3 13	10 15	14 15	14	14
	Kannur (Kannur)	13 0	12 0	8 0	...	...	...	7 0	6 7	5 4	13 8	16 0	11 0	21 6 23	6 14	0 16	0 16	0	0
	Panch Mahals (Godhra)	11 6	11 6	7 4	...	...	...	11 6	11 6	10 0	16 0	16 0	13 5	59 0 59	0 26	10 32	0 32	0	0
	Aden	8 0	8 0	6 9	...	...	...	6 3	6 3	5 1	7 0	7 0	5 9	9 5 9	5 9	5 8	0 8	0	0
	Asargah	16 8	16 8	12 0	...	...	...	10 0	10 0	10 13	12 0	12 0	12 0	31 0 31	0 23	3 30	8 30	0	0
	Burana	12 9	12 9	7 7	22 14	18 0	11 8	8 5	8 0	7 11	13 11	14 0	10 14	25 2 24	0 17	2 23	7 24	0	0
	Dasa	18 0	18 0	17 8	...	...	...	0 6	0 6	4 14	8 6	8 6	7 8	39 8 31	0 23	0 23	0 23	0	0
	Dumach	18 4	19 0	11 0	28 0	30 0	19 8	7 8	8 8	8 8	9 0	7 8	9 8	39 0 30	0 21	8 24	0 24	0	0
	Nasirabad	18 0	17 3	12 8	28 0	26 9	27 3	6 0	6 0	6 0	7 0	7 0	7 0	25 8 26	0 27	0 29	0 29	0	0
	Rajkot	20 0	20 0	16 0	...	...	...	6 8	5 8	5 0	12 0	12 0	11 0	25 0 25	0 23	0 23	8 23	8	8
	Upper South Frontier	11 5	11 3	11 7	16 13	16 0	16 0	8 0	8 3	6 12	11 7	10 0	10 8	20 0 18	8 14	14 20	0 14	0	0
	Karachi	12 10	11 13	10 0	24 0	19 0	16 0	9 0	9 0	7 0	12 0	12 0	10 0	29 0 19	0 16	0 19	0 16	8	8
	Imamabad (Nakur)	12 0	11 0	10 8	20 0	20 0	16 0	10 0	9 0	9 0	14 0	13 0	11 4	20 0 18	0 19	0 20	0 18	0	0
	Shikarpur	11 10	11 6	10 13	18 8	18 0	16 0	9 7	9 2	8 0	15 12	14 8	10 2	17 0 17	4 13	4 18	14 18	0	0
	Thar and Parkar (Umarskot)	15 3	12 9	13 1	...	...	...	...	...	...	9 8	12 0	8 8	...	...	...	16 5 16	7	7
PUNJAB.	Western Districts.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Burdwan	16 0	16 0	13 0	30 0	40 0	22 0	24 0	27 0	16 0	20 12	29 4	16 8	...	...	...	...	...	...
	Banooorah	19 8	19 8	13 0	20 0	22 0	18 0	25 0	25 0	15 8	32 8	32 8	21 0	...	...	...	...	...	...
	Beerbhoom	10 0	18 0	11 8	...	...	...	24 0	26 0	16 0	31 0	30 0	19 0	...	...	...	...	...	...
	Midnapore	15 8	16 0	11 0	...	...	...	27 0	27 0	15 0	34 0	32 0	18 0	...	...	...	...	...	...
	Hooghly	18 0	19 0	14 0	...	...	...	10 0	10 0	8 0	20 0	20 0	14 0	...	...	...	...	...	...
BENGAL.	Howrah	15 8	15 8	13 8	...	...	...	16 8	16 8	11 4	21 8	21 8	14 8	...	...	...	...	...	...

a In the interior the prices range as follow:—Wheat 17-8 to 20 seers, barley 27 to 30 seers, best rice 2 to 21 seers, common rice 25-6 to 31 seers, grain 26 to 31 seers, and salt 16 to 18 seers.

b In the interior the prices range as follow:—Wheat 15 to 22 seers, barley 20 to 30 seers, best rice 18 to 22 seers, common rice 26 to 31 seers, grain 31 to 35 seers, and salt 14 to 22 seers.

ANCE AND COMMERCE.

for the 1st half of April 1881.

AGERS OF 80 TOLANS.

Grain.												Firewood.				Salt.				Districts.				REMARKS.							
Present fortnight.			Past fortnight.			Corresponding fortnight of 1880.			Present fortnight.			Past fortnight.			Corresponding fortnight of 1880.			Present fortnight.			Past fortnight.				Corresponding fortnight of 1880.						
Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.						
8	32	10	32	3	40	0	42	6	46	10	215	13	215	13	215	13	12	0	12	0	12	0	Ganjam								
5	28	5	29	5	35	2	30	13	36	5	87	8	87	8	87	8	10	8	10	8	11	2	Vizagapatnam								
6	36	6	32	13	46	3	42	0	37	13	169	6	169	6	243	0	12	8	12	8	12	8	Godavery								
3	41	3	31	13	29	14	32	8	34	3	145	13	145	13	145	13	13	13	13	2	13	2	Kistna								
6	30	14	25	8	26	13	19	14	21	0	93	5	93	5	93	5	12	11	12	11	12	11	Nellore								
0	33	0	28	8	32	11	32	11	28	6	194	6	194	6	194	6	13	8	13	8	13	14	Cuddapah								
14	34	14	28	2	32	3	31	8	25	2	97	3	97	3	97	3	12	8	12	13	12	8	Bellary								
6	26	3	21	0	29	13	30	0	24	3	203	10	203	10	...	...	12	2	12	2	12	8	Kurnool						
11	26	0	21	8	28	2	28	2	25	0	81	6	81	6	87	8	13	14	13	14	13	14	Madras								
10	30	13	25	10	36	6	34	6	32	8	140	0	140	0	140	0	12	5	12	5	12	5	Chingleput								
6	29	6	22	5	28	6	27	14	25	10	201	11	201	11	201	11	14	13	14	13	12	2	North Arcot								
3	33	3	21	8	29	11	29	11	24	8	194	6	194	6	194	6	13	5	13	5	12	6	South Arcot								
6	28	13	22	5	32	5	30	18	23	2	97	3	97	3	121	8	12	2	12	8	12	2	Tanjore								
6	31	0	21	13	37	6	37	6	24	14	145	13	145	13	194	0	13	8	13	2	13	8	Trichinopoly								
1	36	2	21	5	43	11	43	11	25	10	76	13	76	13	76	13	15	3	14	11	14	13	Madura								
11	18	11	15	2	25	11	25	11	16	10	131	3	131	3	131	3	11	11	11	11	12	3	Tinnevely								
7	6	27	6	21	0	39	6	39	6	24	2	121	8	121	8	121	8	9	3	9	3	9	3	Coimbatore							
6	19	6	14	2	22	3	22	3	18	3	151	10	151	10	151	10	13	5	13	2	11	14	Nilgiris								
4	13	24	13	18	3	30	3	31	0	21	0	109	5	109	5	97	3	13	2	12	3	12	13	Salem							
3	4	12	0	8	12	18	2	23	1	14	5	121	8	121	8	131	8	11	3	11	3	0	14	South Canara							
3	4	12	0	8	12	18	2	23	1	14	5	71	10	71	10	71	10	12	0	12	9	12	9	Bombay							
...	...	...	...	...	...	...	...	...	...	...	...	80	0	80	0	70	0	13	0	13	0	13	4	Ahmedabad	
...	...	...	...	...	...	...	...	...	...	...	...	80	0	80	0	80	0	12	13	12	13	12	13	Kaira	
...	...	...	...	...	...	...	...	...	...	...	...	80	0	80	0	90	0	11	6	11	13	12	0	Surat	
...	...	...	...	...	...	...	...	...	...	...	...	106	0	106	0	106	0	12	12	12	12	12	12	Broach	
1	20	0	11	4	15	10	14	5	11	13	71	1	71	1	71	1	10	12	9	7	9	13	Tanna (Salsette)								
...	...	...	...	...	...	...	...	...	...	...	...	125	0	125	0	100	0	12	0	12	0	11	8	Colaba (Alibag)	
...	...	...	...	...	...	...	...	...	...	...	...	140	0	140	0	140	0	12	0	12	0	12	8	Khandesh (Dhulia)	
7	10	27	10	16	0	24	2	24	2	14	4	115	0	115	0	140	0	12	13	12	13	11	2	Nasik							
...	...	...	...	...	...	...	...	...	...	...	...	76	0	76	0	76	0	12	4	12	4	12	0	Ahmednagar	
...	...	...	...	...	...	...	...	...	...	...	...	98	0	98	0	76	0	12	4	12	4	11	10	Poona	
...	...	...	...	...	...	...	...	...	...	...	...	91	6	91	6	79	8	11	4	11	4	11	0	Sholapur	
...	...	...	...	...	...	...	...	...	...	...	...	112	0	112	0	218	0	10	0	10	2	10	9	Kalugdi (Bagalkot)	
...	...	...	...	...	...	...	...	...	...	...	...	137	15	137	15	116	8	11	6	11	6	10	4	Satara	
...	...	...	...	...	...	...	...	...	...	...	...	70	0	70	0	100	0	12	0	12	0	10	8	Bolgaum	
...	...	...	...	...	...	...	...	...	...	...	...	80	0	80	0	80	0	8	0	8	0	9	0	Dharwar (Hubli)	
...	...	...	...	...	...	...	...	...	...	...	...	180	0	180	0	180	0	11	0	10	6	12	15	Ratnagiri	
...	...	...	...	...	...	...	...	...	...	...	...	213	5	213	5	213	5	10	8	10	8	9	0	Kannara (Karwar)	
...	...	...	...	...	...	...	...	...	...	...	...	200	0	200	0	200	0	11	6	11	6	11	6	Panch Mahals (Godhra)	
...	...	...	...	...	...	...	...	...	...	...	...	65	5	65	5	65	5	32	0	32	0	32	0	Aden	
...	...	...	...	...	...	...	...	...	...	...	...	160	0	160	0	160	0	13	0	13	0	9	8	Asirgarh	
...	...	...	...	...	...	...	...	...	...	...	...	86	0	86	0	91	8	11	10	5	12	5	Baroda		
...	...	...	...	...	...	...	...	...	...	...	...	137	8	137	8	137	8	8	0	8	0	10	8	Dwa	
...	...	...	...	...	...	...	...	...	...	...	...	160	0	160	0	160	0	8	8	8	8	10	0	Nimach	
...	...	...	...	...	...	...	...	...	...	...	...	90	0	90	0	80	0	13	0	13	0	12	12	Nasirabad	
...	...	...	...	...	...	...	...	...	...	...	...	90	0	90	0	80	0	50	0	11	0	52	0	Rajkot	
...	...	...	...	...	...	...	...	...	...	...	...	320	0	320	0	160	0	10	0	10	0	8	4	Upper Sindh Frontier	
...	...	...	...	...	...	...	...	...	...	...	...	105	0	105	0	105	0	14	0	14	0	13	0	Kutch	
...	...	...	...	...	...	...	...	...	...	...	...	320	0	320	0	320	0	10	0	10	0	10	0	Hydrabad (Nasir)	
...	...	...	...	...	...	...	...	...	...	...	...	230	0	235	0	240	0	10	12	10	8	8	4	Shikarpur	
...	...	...	...	...	...	...	...	...	...	...	...	160	0	160	0	160	0	9	10	9	10	10	10	Thar and Parkar (Umarkot)	
																								Western Districts.							
...	22	0	24	0	16	0	100	0	80	0	80	0	10	0	Burdwan					
...	20	0	20	0	13	4	320	0	320	0	360	0	9	0	9	0	Bancoorah			
...	27	0	27	0	18	0	180	0	180	0	180	0	9	0	9	0	Beerbhoom			
...	18	0	18	0	11	0	160	0	160	0	160	0	9	0	10	0	0	Midnapore		
...	20	0	21	0	14	0	120	0	120	0	120	0	9	0	9	0	9	0	Hoguly	
...	20	0	20	0	16	0	80	0	80	0	90	0	10	4	10	0	10	0	Howrah	

d In the interior the prices range as follows:—Wheat 18 to 24 cents, barley 30 cents, best rice 25 to 34-5 cents, common rice 20 to 37-5 cents, grain 18 to 33 cents, and salt 10 to 12 cents.

Prices Current of Food-grains through

Provinces.		Districts.	QUANTITIES PER RU.																			
			Wheat.			Barley.			Rice (best sort).			Rice (common).			Great Millet: (Cholam, Jowar), Hoos Boroam.			Bairish Millet: (Kharif, Rabi, Pannigara, &c.)				
			Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.		
Central Districts.																						
		Calcutta	17 0	15 5	13 0	29 0	21 5	20 0	7 6	6 10	6 10	17 10	18 12	11 8	33 0	32 0	20 0	...	...	...	...	...
		24-Pergunnahs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Nuddea	16 0	16 0	15 4	32 0	32 0	26 10	18 13	20 0	13 5	21 5	22 14	14 8	...	...	...	...	...	...	...	...
		Jessore	17 0	16 0	11 0	...	...	...	20 0	21 0	14 0	29 0	23 8	18 8	...	...	...	...	...	...	...	...
		Moorshedabad	20 0	19 8	20 0	...	...	...	22 0	22 0	16 0	32 0	32 0	18 0	...	...	...	...	...	...	...	...
		Dinapore	15 0	14 8	9 0	27 0	29 1	13 5	24 0	20 0	15 8	33 0	27 0	18 0	...	...	...	...	...	...	...	...
		Rajahmundry	16 8	19 11	22 8	60 0	52 8	30 0	21 0	22 8	18 12	21 0	24 0	19 12	...	...	...	...	...	...	...	...
		Itanagar	18 0	18 0	11 4	...	...	...	15 0	15 0	12 14	22 8	22 8	18 0	...	...	...	...	...	...	...	...
		Dogra	24 0	24 0	24 0	...	...	...	24 0	24 0	17 4	39 6	37 6	25 8	...	...	...	...	...	...	...	...
		Punna	22 8	24 0	20 0	...	...	...	12 0	12 0	10 0	31 0	32 0	18 0	...	...	...	...	...	...	...	...
		Darjeeling	8 0	8 0	8 0	8 0	8 0	8 0	5 0	5 0	4 8	13 0	13 0	11 0	...	...	...	...	...	...	...	...
		Jalpaiguri	19 0	10 0	8 0	...	...	...	16 0	16 0	16 0	25 0	22 8	20 0	...	...	...	...	...	...	...	...
Eastern Districts.																						
		Dacca	16 0	13 5	13 5	45 0	45 0	32 0	29 0	28 8	15 12	35 0	35 0	20 0	...	...	...	...	...	...	...	...
		Farrukpore	20 0	20 0	13 0	30 0	30 0	10 0	7 0	7 0	7 0	25 0	25 0	16 0	...	...	...	...	...	...	...	...
		Backergunge	...	...	...	...	...	...	20 0	20 0	14 0	31 0	32 0	19 8	...	...	...	...	...	...	...	...
		Mymensingh	11 8	11 12	10 0	...	...	...	20 0	20 0	16 0	25 0	25 0	20 0	...	...	...	...	...	...	...	...
		Tippurah	13 4	13 4	10 12	...	...	...	27 0	27 4	18 12	37 0	37 0	23 0	...	...	...	...	...	...	...	...
		Chittagong	...	...	...	...	...	...	16 0	15 0	17 0	30 0	24 0	19 0	...	...	...	...	...	...	...	...
		Noskhally	...	...	...	...	...	...	27 0	27 0	10 0	32 0	33 0	13 0	...	...	...	...	...	...	...	...
		Chittagong Hill Tracts	...	...	...	...	...	...	16 0	16 0	13 5	17 3	17 3	16 0	...	...	...	...	...	...	...	...
		Hill Tipperah	9 0	9 0	8 5	...	...	...	23 0	23 0	16 0	36 0	36 0	23 0	...	...	...	...	...	...	...	...
Behar.																						
		Patna	26 0	26 0	19 0	40 0	40 0	25 0	16 0	16 0	13 8	26 10	26 10	18 0	...	...	...	...	...	...	...	...
		Gya	22 8	22 0	19 0	39 0	38 0	27 8	13 0	13 0	8 8	24 0	24 0	19 0	...	...	...	...	...	...	...	...
		Shahabad	21 0	18 0	17 0	38 0	39 0	25 8	20 0	22 0	17 8	23 0	23 0	18 8	...	...	...	...	...	...	...	...
		Darbhanga	19 0	24 0	18 0	30 0	35 0	30 0	14 0	18 8	11 0	22 0	24 4	15 0	...	...	...	...	...	...	...	...
		Muzaffarpore	20 0	19 0	17 0	45 0	50 0	27 8	11 0	11 0	10 0	24 0	24 0	16 0	...	...	...	...	...	...	...	...
		Surat	20 0	20 0	14 12	42 0	45 0	26 8	10 8	10 8	8 8	23 8	23 0	17 0	13 0	30 0	34 0	...	...	...	...	...
		Champuram	21 0	22 0	16 0	45 0	46 0	28 0	14 0	14 0	12 0	21 0	21 0	17 0	...	...	...	...	...	...	...	...
		Monohar	23 1	23 1	18 14	47 0	42 0	25 5	16 12	16 12	10 8	21 0	21 0	16 12	...	...	...	...	...	...	...	...
		Baghatpur	18 15	18 15	16 7	40 6	50 0	31 13	18 15	20 3	16 6	22 11	24 0	17 11	...	...	...	...	...	...	...	...
		Purnea	24 0	20 0	20 0	40 0	40 0	32 0	25 0	25 0	19 0	30 0	32 0	20 0	...	...	...	...	...	...	...	...
		Maddah	18 0	16 0	19 0	...	...	...	16 0	16 0	16 0	29 0	30 0	20 0	...	...	...	...	...	...	...	...
		Sonthal Pergunnahs	14 8	14 8	13 0	...	...	...	27 0	27 0	16 0	30 0	30 0	22 0	...	...	...	...	...	...	...	...
Orissa.																						
		Cuttack	21 0	21 0	13 2	...	...	...	15 12	15 12	13 2	26 4	26 4	18 6	...	...	...	...	...	...	...	...
		Pooree	19 11	15 0	9 3	...	...	...	24 15	26 0	13 2	27 0	31 8	19 11	...	...	...	...	...	...	...	...
		Balsore	16 0	16 0	14 0	...	...	...	31 12	13 12	16 0	37 12	37 12	21 4	...	...	...	...	...	...	...	...
Chota Nagpore—South.																						
Western Frontier Agency.																						
		Hazaribagh	24 0	21 0	17 0	36 0	...	30 0	18 0	13 0	11 0	24 0	23 0	21 0	...	...	...	...	...	...	...	...
		Lohardugga	20 0	22 0	14 0	32 0	36 0	28 0	22 0	24 0	20 0	26 0	28 0	25 0	...	...	...	...	...	...	...	...
		Singbhum	24 0	16 0	12 0	40 0	32 0	32 0	32 0	32 0	20 0	36 0	36 0	32 0	...	...	...	...	...	...	...	...
		Manbhum	15 0	16 0	14 0	40 0	40 0	34 0	21 0	22 0	0 0	30 0	32 0	26 0	45 0	36 0	40 0	...	...	...	...	...

a In the interior the prices range as follow:—Wheat 13-8 to 14-8 seers, barley 23 to 29 seers, best rice 8 to 11-8 seers, common rice 19-4 to 32 seers, Great millet and maize each 20 seers (in Kidderpore).

f In the interior the prices range as follow:—Wheat 16 to 26-8 seers, barley 32 to 45 seers, best rice 8-4 to 21-8 seers, common rice 23 to 32 seers, maize 18 seers (in Koushtia only), gram 20 to 35 seers, firewood 80 to 200 seers, and salt 8 to 10 seers.

g In the interior the prices range as follow:—Wheat 8 seers, best rice 9 to 20 seers, common rice 25 to 31 seers, gram 8 to 10 seers, firewood 100 to 150 seers, and salt 8 to 10 seers.

h In the interior the prices range as follow:—Wheat 16 to 20 seers, barley 20 to 55 seers, best rice 18 to 25 seers, common rice 25 to 31 seers, bulrush millet 45 seers (in Jangpore only), gram 25 to 31 seers, firewood 110 to 140 seers, and salt 8 to 10 seers.

i In the interior the prices range as follow:—Wheat 10 to 12-8 seers, barley 37 seers, best rice 21 to 32-8 seers, common rice 25 to 29 seers, gram 12 to 14 seers, firewood 120 to 150 seers, and salt 8 to 9 seers.

j In the interior the prices range as follow:—Wheat 19 to 30 seers, barley 13 seers (in Bagidoga only), best rice 18 to 21 seers, common rice 26 to 29 seers, lesser millets 30 seers, (in Kharif only), gram 11 seers, 4 seers, common rice 15 seers, maize 15 seers, gram 9 seers, firewood 160 seers, and salt 8 seers.

k In Kharif the prices are:—Wheat 10-4 seers, common rice 15 seers, lesser millets 12 seers, maize 15 seers, gram 9 seers, firewood 160 seers, and salt 8 seers.

l In the interior the prices range as follow:—Wheat 10 to 16 seers, best rice 12 to 20 seers, common rice 10 to 25 seers, gram 8 to 13-5 seers, firewood 14 to 90 seers, and salt 8 to 9 seers.

m In the interior the prices range as follow:—Wheat 13 seers, barley 45 seers (both in Jhika only), best rice 14 to 29 seers, common rice 23 to 32 seers, gram 19 to 20 seers, firewood 120 to 150 seers, and salt 8 to 9-4 seers.

n In the interior the prices range as follow:—Wheat 26 seers, barley 36 seers (both in Gaudunda only), best rice 12 to 24 seers, common rice 24 to 32 seers, gram 13 seers, firewood 120 to 200 seers, and salt 8 to 10 seers.

o In the interior the prices range as follow:—Best rice 20 to 30-14 seers, common rice 24 to 33-8 seers, paddy 50 to 60 seers, lesser millets 65 seers (in Dholi only), gram 10 to 31 seers, firewood 80 to 200 seers, and salt 8 seers.

p In the interior the prices range as follow:—Wheat 10 to 21 seers, best rice 10 to 27-8 seers, common rice 23 to 32 seers, lesser millets 25 seers (in Dewangunge only), gram 9-5 to 18 seers, and salt 8 to 9-12 seers.

q In the interior the prices range as follow:—Best rice 22 to 40 seers, common rice 23 to 43 seers, and salt 8 to 8 seers.

his for the 1st half of April 1891 —continued.

SEERS OF 80 TOLAHS.

For Millers, Blag, &c. Serra, Veragu, Sawes, Pena, Coraio, Blurh, Nagios, Paniam, Miam, &c.																Gram.				Firewood.				Salt.				Districts.	REMARKS.	PROVINCE.
Past fortnight.		Corresponding fort- night of 1880.		Present fortnight.		Past fortnight.		Corresponding fort- night of 1880.		Present fortnight.		Past fortnight.		Corresponding fort- night of 1880.		Present fortnight.		Past fortnight.		Corresponding fort- night of 1880.										
Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.							
...	...	36	14	21	0	16	0	90	0	90	0	90	0	10	0	10	0	10	0	10	0	10	0	Central Districts.						
...	...	20	0	19	8	14	8	90	0	80	0	90	0	9	6	10	0	9	6	10	0	9	6	Calcutta						
...	...	29	0	29	1	20	0	...	...	120	0	120	0	10	0	10	0	9	6	10	0	9	6	24 Pergunnahs.				
...	...	20	0	16	8	13	4	110	0	110	0	110	0	8	0	8	0	8	0	8	0	8	0	Nudien						
...	...	32	0	32	0	25	0	120	0	120	0	120	0	8	0	8	0	8	0	8	0	8	0	Jessore						
...	...	16	0	16	0	10	0	180	0	180	0	160	0	8	8	8	12	8	8	8	8	8	8	Moorshedabad						
...	...	21	0	26	4	24	0	250	0	250	0	240	0	9	0	9	6	9	0	9	6	9	0	Dinapore						
...	...	28	2	11	4	11	4	9	0	120	0	120	0	8	12	8	12	8	0	8	0	8	0	Rajshahye						
...	...	19	8	18	8	19	14	67	8	67	8	67	8	8	4	8	7	8	7	8	7	8	7	Rungpore						
...	...	18	0	18	12	22	8	200	0	200	0	200	0	9	0	9	6	9	0	9	6	9	0	Bogra						
0	9	0	9	0	8	0	8	0	6	8	160	0	160	0	4	0	4	0	5	0	5	0	5	0	Pubna					
...	...	13	5	13	5	8	0	64	0	64	0	64	0	8	0	8	0	8	0	8	0	8	0	8	Darjooling					
...	...	18	0	20	0	14	4	106	0	106	0	91	8	9	8	9	11	0	0	0	0	0	0	0	Jalpaiguri					
...	...	13	0	13	0	10	0	...	...	...	...	...	...	10	0	9	8	9	0	9	0	9	0	9	0	Eastern Districts.
...	...	18	8	18	8	10	0	100	0	100	0	100	0	8	12	8	12	8	8	8	8	8	8	8	8	Dacca				
...	...	18	0	18	0	11	0	...	...	...	...	...	...	9	4	9	0	8	12	8	12	8	12	8	12	Furzedpore
...	...	18	0	16	0	11	0	...	...	...	...	...	...	9	8	9	8	8	12	8	12	8	12	8	12	Backorgunge
...	...	13	0	16	0	9	0	80	0	80	0	80	0	7	0	10	0	8	0	8	0	8	0	8	0	Mymonaingh				
...	...	16	0	16	0	7	0	...	...	...	...	...	...	8	0	8	0	8	0	8	0	8	0	8	0	Tipperah
...	...	9	0	9	0	8	5	320	0	320	0	320	0	8	0	8	0	8	0	8	0	8	0	8	0	Chittagong				
...	...	9	0	9	0	8	5	...	...	...	...	...	...	8	0	8	0	8	0	8	0	8	0	8	0	Nonkholly
...	...	40	0	40	0	24	0	120	0	120	0	140	0	9	4	9	14	8	0	8	0	8	0	8	0	Chittagong Hill Tracts				
...	...	32	0	32	0	23	0	180	0	160	0	140	0	9	0	9	0	9	0	9	0	9	0	9	0	Hill Tipperah				
...	...	40	0	40	0	22	0	140	0	140	0	160	0	9	8	9	8	9	0	9	0	9	0	9	0	Behar.				
...	...	40	0	40	0	24	0	120	0	120	0	140	0	9	4	9	14	8	0	8	0	8	0	8	0	Patna				
...	...	32	0	32	0	23	0	180	0	160	0	140	0	9	0	9	0	9	0	9	0	9	0	9	0	Gya				
...	...	40	0	40	0	22	0	140	0	140	0	160	0	9	8	9	8	9	0	9	0	9	0	9	0	Shahabad				
38	0	22	0	23	0	29	0	18	0	140	0	138	0	160	0	8	8	9	4	8	0	8	0	8	0	Darbhanga				
...	...	30	0	30	0	21	0	140	0	140	0	120	0	9	8	9	8	8	8	8	8	8	8	8	8	Mozufferpore				
34	0	22	4	33	0	32	0	21	0	160	0	160	0	9	0	9	0	8	4	8	0	8	0	8	0	8	Saran			
...	...	23	0	23	0	26	0	8	0	8	0	8	0	8	0	8	0	8	0	8	Chunparan			
...	...	33	9	33	9	16	12	126	0	126	0	126	0	8	6	8	6	8	6	8	6	8	6	8	6	8	Monghyr			
...	...	32	12	34	1	20	3	126	4	126	4	126	4	9	6	9	6	9	7	9	7	9	7	9	7	9	Bhagalpur			
...	...	23	0	23	0	16	0	120	0	120	0	120	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	Purneah		
...	...	20	0	18	0	22	0	100	0	100	0	120	0	9	0	9	0	8	8	8	8	8	8	8	8	8	Maldah			
...	...	22	0	22	0	15	0	200	0	200	0	200	0	8	0	8	0	8	0	8	0	8	0	8	0	8	0	Southal Pergunnahs		
18	6	9	14	26	4	23	10	17	1	160	0	160	0	11	0	11	0	11	0	11	0	11	0	11	0	11	0	Orissa.		
...	...	19	11	17	3	14	7	100	0	100	0	100	0	11	13	11	13	11	13	11	13	11	13	11	13	11	13	Cuttack		
...	...	13	5	13	5	9	0	105	0	105	0	120	0	9	4	9	4	9	0	9	0	9	0	9	0	9	0	Pooree		
...	...	13	5	13	5	9	0	105	0	105	0	120	0	9	4	9	4	9	0	9	0	9	0	9	0	9	0	Balasore		
...	...	24	0	16	0	16	0	160	0	160	0	240	0	7	0	7	0	7	8	7	8	7	8	7	8	7	8	Chota Nagpore—South.		
...	...	24	0	16	0	16	0	160	0	160	0	240	0	7	0	7	0	7	8	7	8	7	8	7	8	7	8	Western Frontier Agency.		
...	...	24	0	16	0	16	0	160	0	160	0	240	0	7	0	7	0	7	8	7	8	7	8	7	8	7	8	Hazaribagh		
...	...	24	0	16	0	16	0	160	0	160	0	240	0	7	0	7	0	7	8	7	8	7	8	7	8	7	8	Lohardugga		
...	...	24	0	16	0	16	0	160	0	160	0	240	0	7	0	7	0	7	8	7	8	7	8	7	8	7	8	Singbhoom		
...	...	24	0	16	0	16	0	160	0	160	0	240	0	7	0	7	0	7	8	7	8	7	8	7	8	7	8	Maubhoom		

—continued.

1 In the interior the prices range as follow:—Wheat 22-8 to 34 seers, barley 33 to 38 seers, best rice 11 to 12 seers, common rice 10-8 to 21 seers, great and lesser millets 40 seers (in
 2 Khanda sub-division only), maize 37-8 seers, gram 32 to 40 seers, drowood 200 to 400 seers, and salt 8 to 8-12 seers.
 3 In the interior the prices range as follow:—Wheat 22 to 37 seers, barley 45 to 65 seers, best rice 13 to 35 seers, common rice 25 to 32 seers, lesser millets 40 to 60 seers, maize 45 to
 4 60 seers, gram 30 to 42 seers, drowood 200 seers and salt 8 seers.
 5 In the interior the prices range as follow:—Wheat 17-6 to 40 seers, barley 40 to 75 seers, best rice 13 to 37 seers, common rice 23 to 36 seers, lesser millets 40 to 65 seers, maize
 6 40 to 70 seers, gram 31 to 60 seers, drowood 120 to 160 seers, and salt 7 to 8-8 seers.
 7 In the interior the prices range as follow:—Wheat 20 to 35-8 seers, barley 61 to 60 seers, best rice 12 to 30 seers, common rice 21 to 28-6 seers, lesser millets 45 to 56 seers, maize
 8 45 to 65 seers, gram 23 to 60 seers, drowood 180 seers (in British only), and salt 7 to 8-3 seers.
 9 In the interior the prices range as follow:—Wheat 14 to 25 seers, barley 61 to 60 seers, best rice 11 to 30 seers, common rice 24 to 25 seers, great millets 40 to 60 seers, lesser millets
 10 45 to 60 seers, maize 37 seers, gram 12 to 65 seers, drowood 180 to 160 seers, and salt 8 to 8 seers.
 11 In the interior the prices range as follow:—Wheat 14 to 30 seers, barley 60 seers (in Sopolia only), best rice 24 to 30 seers, common rice 27 to 23 seers, lesser millets 40 to
 12 60 seers, maize 35 seers, gram 27 to 25 seers, drowood 190 seers, and salt 8 seers.
 13 In the interior the prices range as follow:—Wheat 10 to 36 seers, barley 60 seers (in Oothree only), best rice 17 to 20 seers, common rice 26 to 24 seers, gram 16 to 22 seers,
 14 drowood 120 to 126 seers, and salt 8 seers.
 15 In the interior the prices range as follow:—Rice from 20-4 to 43 seers.
 16 In the interior the prices are:—Best rice 21-10 seers, common rice 36-2 seers, gram 21 seers, drowood 190 seers, and salt 12 seers.
 17 In the interior the prices range as follow:—Wheat 30 to 21 seers, barley 39 to 40 seers, best rice 14 to 16 seers, common rice 24 to 30 seers, lesser millets 60 to 70 seers, maize 64
 18 to 60 seers, gram 23 to 20 seers, and salt 8 to 8 seers.
 19 In Baluchistan the prices are:—Wheat 47-75 seers, barley 66 seers, best rice 16-75 seers, common rice 21-75 seers, bulrush millet 80 seers, lesser millets 40 seers, maize 56 seers,
 20 gram 40 seers and salt 7-80 seers.
 21 In the interior the prices range as follow:—Wheat 11 to 24 seers, barley 30 seers, (in Govindpore only), best rice 20 to 28 seers, common rice 27 to 33 seers, lesser millets 60 seers
 22 (in Govindpore only), maize 60 seers, gram 10 to 24 seers, drowood 240 to 600 seers, and salt 5 to 9 seers.

Prices Current of Food-grains through

QUANTITIES PER RU

Provinces.	Districts.	Wheat.			Barley.			Rice (best sort).			Rice (common).			Great Millet (Chotum, Jowar), Hausa Sorghum.			Bairush Millet (Cumbao, Hausa, Pennisetum Sp.)		
		Present fortnight.	Past fortnight.	Corresponding fort- night of 1880.	Present fortnight.	Past fortnight.	Corresponding fort- night of 1880.	Present fortnight.	Past fortnight.	Corresponding fort- night of 1880.	Present fortnight.	Past fortnight.	Corresponding fort- night of 1880.	Present fortnight.	Past fortnight.	Corresponding fort- night of 1880.	Present fortnight.	Past fortnight.	Corresponding fort- night of 1880.
Assam.	Sylhet	13 0	13 0	8 0	...	...	...	16 0	16 0	11 0	28 0	28 0	16 0	...	...	...	...	...	...
	Cachar	8 0	8 0	7 9	20 0	20 0	16 0	17 12	17 12	12 4	20 0	20 0	14 8	...	...	...	...	...	...
	Goalpara	20 0	20 0	16 0	...	...	...	13 5	13 5	13 5	20 0	20 0	17 12	...	...	...	...	...	...
	Garo Hills	4 0	4 0	...	...	...	...	5 0	5 0	5 0	18 0	18 0	14 0	...	...	...	...	...	...
	Kamrup	14 0	14 0	18 0	...	...	...	18 0	18 0	13 0	22 0	22 0	16 0	...	...	...	...	...	...
	Darrang	8 0	8 0	8 0	...	...	...	8 0	8 0	8 0	16 0	11 8	11 8	...	...	...	...	...	...
	Nowgong	...	...	...	...	...	...	10 0	10 0	8 0	16 0	16 0	12 0	...	...	...	...	...	...
	Sibsagar	...	...	...	...	...	...	8 0	8 0	6 0	16 0	16 0	14 0	...	...	...	...	...	...
	Lakhimpur	...	...	7 0	...	...	...	...	...	5 8	...	...	10 0	...	...	...	...	...	...
	Khasi & Jaintia Hills	8 0	8 0	5 8	...	...	...	8 0	8 8	7 0	9 0	9 0	7 8	...	...	...	...	...	...
	Naga Hills	...	...	...	...	...	...	5 0	5 0	...	...	...	...	...	...	...	...	...	...
N.W. Provinces.	Dehra Dun	17 0	17 0	16 8	29 0	28 0	28 0	11 0	11 0	12 0	12 8	12 8	12 0	20 0	22 0	22 0	17 0	22 0	20 8
	Salwanpur	18 5	18 5	19 6	28 0	28 0	32 3	8 10	8 10	7 9	11 14	11 14	11 6	25 14	23 10	23 4	8 20	8 20	8 20
	Muzaffarnagar	21 8	19 12	19 4	33 0	33 0	27 8	6 9	6 9	6 9	14 5	14 5	14 5	26 6	21 0	23 10	10 21	10 21	10 21
	Meerut	21 0	21 0	16 8	32 0	31 0	30 0	5 8	5 0	5 0	14 0	14 0	12 0	26 0	27 0	23 0	8 23	8 23	8 23
	Bulandshahr	21 4	21 8	19 8	32 0	31 0	31 8	6 0	6 0	6 0	12 0	11 8	11 5	25 0	25 0	23 0	8 23	8 23	8 23
	Aligarh	20 8	19 8	19 8	29 0	30 0	31 0	8 0	8 0	8 0	11 0	12 0	11 0	...	...	...	...	...	...
	Kanun	12 8	13 0	11 0	15 0	15 0	14 0	8 0	8 0	9 0	18 4	18 4	15 8	20 8	21 0	20 0	8 21	8 21	8 21
	Gorhwal	17 0	17 0	14 0	18 8	18 0	16 0	9 0	9 0	9 0	18 4	18 4	13 4	...	...	...	...	...	...
	Bijnor	19 11	19 2	20 13	31 4	31 4	38 14	11 4	11 4	13 8	18 8	18 8	15 8	20 4	20 4	23 8	2 18	2 18	2 18
	Moradabad	20 10	21 14	21 14	31 4	31 4	37 8	7 8	8 2	7 18	15 10	15 0	16 14	23 12	23 10	23 0	10 21	10 21	10 21
	Budhau	21 9	20 6	21 9	32 6	33 9	36 0	6 0	6 0	6 0	14 6	16 0	15 0	24 19	3 21 0	...	19 0	19 0	19 0
	Bareilly	21 14	18 12	20 15	31 4	30 0	33 12	6 4	6 4	5 0	14 6	16 0	15 0	30 0	30 0	25 0	8 22	8 22	8 22
	Shahjahanpur	21 12	21 6	20 12	31 8	32 4	33 0	7 8	8 4	6 4	14 0	16 8	16 4	...	...	...	...	...	...
	Tarai Pergumaha	20 0	18 12	22 8	35 0	30 0	45 0	8 12	8 12	10 0	15 0	15 0	17 8	22 8	22 8	...	...	...	...
	Muttra	19 8	19 8	16 8	26 0	26 0	29 0	8 0	8 0	8 0	14 0	14 0	15 0	21 0	21 0	18 0	19 0	19 0	19 0
	Agra	19 0	18 8	16 8	24 0	24 0	27 0	4 0	4 0	4 0	14 4	14 5	16 11	23 21	23 0	26 31	22 12	22 12	22 12
	Farrukhabad	20 8	19 15	19 6	29 0	27 10	28 4	6 2	5 12	5 12	14 4	14 5	16 11	23 21	23 0	26 31	22 12	22 12	22 12
	Mainpuri	18 4	19 4	19 0	27 4	27 8	28 0	5 8	5 8	5 0	12 8	12 8	12 0	...	...	...	...	...	...
	Etawah	19 0	19 8	18 0	25 8	25 0	24 0	6 0	6 0	6 0	15 0	15 0	18 0	23 0	23 0	29 0	23 0	23 0	23 0
	Etah	21 0	19 0	20 4	30 0	29 0	29 4	8 0	8 0	8 0	14 0	14 0	17 0	...	...	...	...	...	...
	Jalaun	22 0	24 0	20 0	26 0	24 0	24 0	8 0	8 0	6 0	12 0	12 0	12 0	24 0	24 0	16 0	20 0	20 0	20 0
	Jhansi	24 11	26 5	19 0	35 6	34 0	33 11	7 8	7 8	8 8	13 0	13 0	16 0	31 14	35 0	35 15	...	...	...
	Lalitpur	23 8	25 8	17 8	34 0	36 0	45 0	8 0	8 0	9 0	10 0	10 0	12 0	23 0	23 0	29 0	23 0	23 0	23 0
	Cawnpore	22 0	21 8	18 0	31 0	30 8	29 0	8 0	8 0	8 0	13 12	14 0	17 8	...	...	...	...	...	...
	Fatehpur	19 4	18 4	16 0	26 0	25 8	27 0	9 8	9 8	9 0	13 12	14 0	17 8	...	...	...	...	...	...
	Banda	19 8	20 4	18 0	24 0	26 0	25 0	8 0	8 0	8 0	16 0	16 0	18 0	27 0	27 0	23 0	23 0	23 0	23 0
	Allahabad	19 12	19 8	19 0	27 8	28 8	29 8	11 0	11 0	11 0	17 8	18 4	19 8	29 0	29 8	34 8	8 26	8 26	8 26
	Hammurpur	20 13	18 18	16 12	26 7	25 14	22 8	10 0	10 0	9 0	16 0	15 0	13 6	24 8	23 12	29 8	8 22	8 22	8 22
	Jaunpur	21 14	21 15	20 4	31 1	33 14	31 1	8 7	7 12	8 7	16 15	16 15	17 9	...	...	...	...	...	...
	Gorakhpur	23 6	25 3	21 9	39 9	41 6	40 3	16 8	15 4	14 6	23 6	23 6	18 0	43 8	43 8	38 14	34 5	34 5	34 5
	Basti	26 0	26 0	19 8	48 0	46 0	37 0	17 4	17 8	16 0	22 0	22 0	17 0	...	...	...	...	...	...
	Azimgarh	19 3	19 8	17 0	32 7	32 15	25 1	8 12	8 2	8 2	19 3	19 3	17 0	39 12	39 12	...	...	...	...
	Mirzapur	19 0	18 0	18 0	28 0	28 0	30 8	10 0	10 0	10 0	16 0	16 0	16 0	29 0	30 0	30 0	23 0	23 0	23 0
	Benares	18 2	18 11	18 7	28 3	28 7	27 2	12 7	12 7	12 8	22 4	21 2	18 2	...	...	...	...	...	...
	Ghazipur	23 13	23 18	17 6	34 1	36 1	34 15	10 16	10 16	10 15	19 15	17 6	17 6	41 8	41 13	24 15	33 7	33 7	33 7
	Badia	22 8	20 0	16 0	38 12	40 0	26 4	10 0	10 0	8 4	23 0	23 0	13 0	...	...	...	...	...	...
	Pilibhit	21 4	21 4	...	40 0	31 4	...	10 0	10 0	...	...	...	...	...	...	...	...	...	...
Orissa.	Lucknow	21 0	18 10	18 4	31 0	29 0	29 12	6 0	6 0	6 0	15 4	15 8	16 0	28 8	29 0	26 4	24 0	24 0	24 0
	Unao	20 1	21 7	17 0	28 0	30 0	32 0	8 0	8 0	9 0	15 0	15 0	16 0	33 8	32 0	26 0	20 0	20 0	20 0
	Bara Banki	21 0	20 4	18 12	32 0	30 0	32 0	8 0	8 0	9 0	15 0	15 0	16 0	33 8	32 0	26 0	20 0	20 0	20 0
	Sitapur	21 14	23 2	21 5	32 4	33 8	36 8	8 8	8 8	8 8	16 10	17 0	16 10	32 4	33 0	26 0	20 0	20 0	20 0
	Hardoi	20 0	20 5	18 12	33 5	33 12	30 8	5 10	5 10	4 15	14 1	13 2	14 1	...	...	...	...	...	...
	Kheri	22 8	22 0	22 0	32 0	32 0	36 0	7 0	7 0	7 0	16 0	17 0	18 0	...	...	...	...	...	...
	Fyzabad	20 0	17 14	18 8	32 0	30 0	32 0	10 12	10 8	9 2	15 12	15 8	17 0	31 4	31 0	22 0	...	...	...
	Bharnach	19 0	18 8	18 0	40 0	36 0	42 0	9 0	9 0	8 0	18 0	18 0	18 0	50 0	40 0	36 0	18 0	18 0	18 0
	Gonda	22 13	22 5	21 4	37 12	34 4	38 0	17 4	16 12	14 12	19 2	19 8	19 8	...	...	...	...	...	...
	Kaz Bareilly	22 2	21 8	20 6	25 8	27 8	32 8	18 8	18 0	18 0	14 4	14 0	19 8	...	...	...	...	...	...
Punjab.	Sultanpur	22 0	24 0	22 0	31 0	36 0	34 0	11 0	11 0	9 0	18 0	16 0	19 0	29 0	30 0	...	21 8	21 8	21 8
	Portabgarh	22 0	22 8	21 13	32 5	34 4	32 12	13 10	14 13	18 8	15 0	15 13	20 13	...	...	...	...	...	...
	Delhi	18 12	19 4	18 0	28 0	26 8	25 0	...	...	...	15 0	15 0	14 0	23 8	23 8	4 29	0 23	0 23	0 23
	Gurgaon	21 0	20 0	18 0	30 0	28 0	27 4	...	...	...	13 0	13 0	13 0	24 0	24 0	...	...	...	...
	Karnal	18 0	17 10	17 0	32 0	29 6	28 0	...	...	...	10 0	10 0	10 0	27 0	26 8	...	...	...	...
	Hissar	16 8	15 8	14 0	28 0	26 0	29 0	...	...	...	11 0	11 0	10 0	25 0	25 0	...	...	...	...
	Rohtak	18 0	18 0	16 4	27 0	24 8	28 0	...	...	...	12 0	12 0	10 8	25 0	25 0	...	...	...	...
	Sirsa	17 0	17 0	16 0	32 0	31 0	35 0	...	...	...	12 0	12 0	10 8	25 0	25 0	...	...	...	...
	Umballa																		

for the 1st half of April 1881—continued.

SEERS OF 80 TOLAHS.

Major Millers, Razi.
Lt. Kavara, Veragu,
Lt. Cheena, Coralloo,
Lt. Naxico, Pas-
Lt. Muzum, &c.

			Gram.			Firewood.			Salt.			DISTRICTS.	REMARKS.
Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.		
Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	PROVINCES.	
Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.	Ch.	S.		
...	12 0	12 0	11 0	108 0	108 0	108 0	8 8	8 6	8 8	ASSAM.	Sylhet
...	16 0	15 4	11 13	64 0	64 0	80 0	9 2	8 14	8 6		Cachar
...	11 6	11 6	8 7	120 0	120 0	120 0	8 0	8 0	8 0		Goalpara
...	6 8	6 8	6 12	160 0	160 0	160 0	5 5	5 5	5 5		Garo Hills
...	18 0	18 0	8 0	200 0	200 0	200 0	8 0	8 0	8 0		Kamrup
...	7 8	7 9	8 0	160 0	160 0	160 0	7 0	7 0	6 8		Darrang
...	8 0	8 0	8 0	100 0	100 0	100 0	8 0	8 0	7 0		Nowgong
...	8 0	8 0	8 0	120 0	120 0	120 0	6 8	6 8	6 8		Sibsagar
...	8 0	...	...	160 0	...	...	6 8		Lachimpur
...	8 0	8 0	...	120 0	120 0	...	5 5	5 12	5 6		Khasi & Jaintia Hills
...	2 0	2 0	...		Naga Hills
...	17 8	18 0	17 8	160 0	160 0	160 0	11 0	10 8	9 0	N.W. PROVINCES.	Dohra Doo
...	19 14	20 7	20 8	147 8	129 0	149 0	10 12	10 12	10 0		Saharanpur
...	22 0	19 12	21 0	132 0	132 0	132 0	...	...	...		Muzaffarnagar
...	23 0	22 0	23 8	110 0	110 0	80 0	9 0	9 0	9 0		Meerut
...	24 10	23 8	23 4	140 0	140 0	120 0	...	...	12 0		Bulandshahr
...	24 8	21 0	24 0	140 0	140 0	160 0	11 0	10 8	...		Aligarh
...	12 0	12 0	13 0	160 0	160 0	160 0	7 0	7 0	7 0		Kanoun
...	6 0	6 0	6 0	200 0	200 0	160 0	7 0	7 0	7 8		Gurhal
...	22 8	17 7	25 0	135 0	135 0	135 0	...	...	...		Bijnor
...	19 0	18 2	26 4	120 0	120 0	150 0	...	...	...		Moradabad
...	22 12	20 6	28 18	192 0	192 0	192 0	10 3	10 3	9 9	ODISHA.	Budaon
...	21 14	18 12	23 12	137 8	160 0	125 0	10 0	10 10	10 0		Bareilly
...	20 8	22 8	16 4	180 0	160 0	160 0	10 4	10 8	10 0		Shahjahanpur
...	23 12	16 4	22 8	120 0	120 0	140 0	10 0	10 0	10 0		Tarai Pergunnah
...	22 8	22 8	25 0	100 0	100 0	120 0	11 0	11 0	11 0		Muttra
...	21 0	21 8	23 0	80 0	80 0	100 0	11 0	11 0	12 0		Agra
...	21 15	21 8	22 1	156 12	158 12	163 8	...	...	...		Farrukhabad
...	19 12	18 8	19 0	160 0	160 0	160 0	...	...	...		Mainpuri
...	25 0	23 8	20 0	120 0	120 0	120 0	8 8	8 8	8 0		Etawah
...	17 8	17 8	19 0	100 0	140 0	140 0	11 8	11 0	11 4		Etah
...	26 0	24 0	15 0	120 0	120 0	120 0	...	...	...	BENGAL.	Jalaun
...	29 14	32 12	25 14	200 0	200 0	200 0	...	...	...		Jhansi
...	35 0	37 0	28 0	200 0	200 0	180 0	...	...	9 0		Lalitpur
...	24 8	27 0	24 0	170 0	170 0	145 0	12 8	13 0	10 8		Cawnpore
...	21 0	21 8	21 0	200 0	200 0	200 0	...	...	...		Fatehpur
...	23 8	28 0	27 0	200 0	180 0	160 0	...	...	...		Banda
...	25 4	25 8	23 8	160 0	160 0	155 0	9 4	8 8	8 12		Allahabad
...	25 5	24 9	24 2	140 0	140 0	140 0	...	...	...		Hamirpur
...	26 2	26 6	22 10	169 8	169 8	141 4	7 12	7 12	9 9		Jampur
...	41 6	32 8	27 0	120 0	120 0	160 0	8 6	8 6	8 6		Gorakhpur
...	30 8	29 0	20 0	140 0	140 0	120 0	8 0	8 0	7 12	MADRAS.	Basti
...	26 9	26 9	15 8	147 8	147 8	177 0	8 2	8 2	8 2		Azamgarh
...	24 0	23 0	20 0	100 0	100 0	100 0	9 0	9 0	9 0		Mirzapur
...	26 0	22 4	22 4	120 0	120 0	120 0	...	...	10 6		Benares
...	33 7	32 13	23 3	180 0	180 0	200 0	9 1	9 1	7 11		Ghazipur
...	33 12	31 4	24 4	120 0	120 0	...	...	...	...		Itan
...	21 4	20 10	...	160 0	160 0	...	...	...	...		Pilibhit
...		Lucknow
...	33 0	33 0	30 0	22 8	21 12	23 2	120 0	120 0	110 0		Unao
...	26 0	26 0	26 0	22 2	22 0	23 8	160 0	160 0	145 0		Barn Banki
...	32 0	32 0	32 0	23 0	24 0	26 0	120 0	120 0	120 0	Description of Lesser Mills.	Sitapur
...	30 0	30 0	28 8	25 12	21 10	24 0	160 0	160 0	160 0		Hardui
...	24 5	23 7	28 2	300 0	300 0	240 0		Kheri
...	45 0	45 0	45 0	22 0	22 0	18 0	200 0	200 0	200 0		Fyzabad
...	24 4	23 0	23 0	140 0	140 0	140 0		Bhmrach
...	60 0	60 0	42 0	30 0	28 0	21 0	160 0	160 0	160 0		Gonda
...	45 0	61 0	38 12	29 8	30 8	22 8	240 0	240 0	240 0		Man Bareli
...	19 4	20 8	25 8	160 0	160 0	160 0		Sultanpur
...	33 0	38 0	35 0	26 0	28 0	26 0	160 0	160 0	160 0		Partalgarh
...	25 4	26 5	34 8	20 10	21 12	19 0	200 0	200 0	186 11		
...	22 4	22 0	24 0	90 0	90 0	70 0	MYSORE.	Dellhi
...	24 0	22 8	26 0	120 0	120 0	90 0		Gurgaon
...	24 0	21 0	23 0	160 0	160 0	160 0		Karnal [a]
...	26 8	26 0	27 8	100 0	100 0	120 0		Hissar
...	23 0	23 0	24 8	100 0	100 0	60 0		Kotlak [b]
...	27 0	27 0	32 0	120 0	120 0	120 0		Rohtak
...	22 8	21 4	24 4	160 0	160 0	160 0		Umbla [c]
...	25 0	24 0	24 8	100 0	100 0	100 0		Ludhiana [d]
...	16 8	19 0	17 0	90 0	90 0	80 0		Smala
...	21 8	22 0	23 8	100 0	100 0	100 0		Jalandhar [e]
...	22 0	22 0	23 0	120 0	120 0	120 0	PUNJAB.	Hoshiarpur
...	17 0	19 0	15 0	160 0	160 0	160 0		Amritsar

22. corresponding 16 years.

Description of Lesser Mills.
a Jowar (large).
b Chotajwar.
c Kodon.
d Ma. m. moth, sawan, and kodon.
e Sawan, kodon and mardun.
f Peas.
g Peas, arhar, and mardun.

[a] Gram falling.
[b] Barley falling and firewood rising.
[c] Jowar falling.
[d] Wheat and barley falling.
[e] Barley falling.

Prices Current of Food-grains (continued)

QUANTITIES PER RUPEE

PROVINCE.		DISTRICTS.	QUANTITIES PER RU.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
			Wheat.			Barley.			Rice (best sort).			Rice (common).			Great Millet (Cholan, Jowar, Bajra, Sorghum).			Beltash Millet (Cumbua, Batta, Panchulana, Spina).																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
			Present fortnight.	Past fortnight.	Corresponding fortnight of 1890.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1890.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1890.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1890.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1890.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1890.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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India for the 1st half of April 1881—continued.

IN SEERS OF 80 TOLARS.

Lesser Millets, Barley, &c. (Kavara, Veraru, Sango, Chenna, Coraoo, Murwa, Nugioli, Pauran Millets, &c.)			Gram.			Firewood.			Salt.			DISTRICTS.	PROVINCES.	REMARKS.
Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.	Present fortnight.	Past fortnight.	Corresponding fortnight of 1880.			
S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.	S. Ch.			
...	21 0	22 0	22 8	90 0	90 0	90 0	12 8	12 8	11 0	Amritsar	PUNJAB—continued.	[a] Barley falling. [b] Barley, bajra, jowar falling and firewood rising. [c] Barley and firewood falling. [d] Jowar falling. [e] Gram falling.
...	20 0	18 4	18 0	140 0	140 0	140 0	12 8	12 8	11 4	Siálkot		
...	19 0	18 0	21 0	120 0	120 0	120 0	11 0	11 0	10 8	Gurdáspur		
...	21 0	21 0	22 0	80 0	80 0	80 0	11 0	11 12	11 0	Lahore		
...	24 0	24 0	24 0	70 0	70 0	90 0	11 0	11 8	11 0	Ferozepore [a]		
...	19 4	18 0	18 4	95 0	95 0	95 0	12 8	12 8	11 0	Gujránwála [a]		
...	15 0	14 0	12 8	40 0	50 0	82 0	11 4	11 0	10 4	Riwalpindi [b]		
...	18 0	17 8	18 0	100 0	90 0	120 0	12 8	12 8	12 0	Jhelum		
...	15 8	15 0	16 0	320 0	320 0	320 0	14 0	14 0	14 0	Gujrát [c]		
...	16 8	16 0	17 0	80 0	80 0	80 0	12 4	12 0	12 8	Shahpúr [a]		
...	16 0	16 8	17 8	200 0	200 0	200 0	13 0	12 4	11 8	Mooltan		
...	17 0	17 0	20 0	200 0	200 0	200 0	10 8	10 8	10 0	Jhang [d]		
...	15 0	14 8	15 0	100 0	100 0	100 0	12 0	11 8	11 8	Montgomery		
...	9 2	11 0	13 12	106 0	106 0	100 0	46 4	46 4	35 0	Muzaffargarh		
...	14 11	16 2	13 7	125 0	125 0	125 0	28 2	27 8	18 12	Dera Ismail Khán		
...	10 10	5 10	12 10	80 0	80 0	100 0	80 0	80 0	100 0	Dera Ghazi Khán		
...	14 9	10 13	8 0	61 0	66 0	61 0	12 4	43 8	28 12	Bannu		
...	9 14	9 8	9 2	76 0	76 0	76 0	43 6	43 6	61 8	Pesháwar [e]		
...	10 0	9 8	8 0	120 0	90 0	160 0	9 8	9 8	8 0	Kohát		
...	Házára [e]		
...	27 4	27 12	15 4	150 0	150 0	140 0	10 4	10 4	10 0	Nágpur	CENTRAL PROVINCES.	
...	30 0	26 8	18 0	...	...	...	9 8	9 8	9 12	Bhandára		
...	24 0	23 12	17 12	360 0	360 0	360 0	9 8	10 0	10 0	Chánda		
...	22 12	22 0	18 0	135 0	135 0	132 0	10 8	10 8	10 0	Wardha		
...	32 0	27 8	20 0	275 0	275 0	300 0	9 8	9 8	9 0	Bálághát		
...	34 0	35 0	24 0	140 0	130 0	150 0	9 0	9 4	9 4	Jubbulpore		
...	38 0	39 0	27 0	160 0	160 0	160 0	7 12	8 4	7 8	Saugor		
75 0	...	40 0	43 0	44 0	30 0	200 0	200 0	200 0	7 8	7 8	9 0	Damoh		
35 0	35 0	32 8	32 0	34 0	21 0	200 0	200 0	200 0	6 8	6 12	9 0	Seoni		
25 0	30 0	15 8	32 0	32 0	20 0	240 0	240 0	240 0	7 0	7 0	8 8	Mandla		
20 0	25 0	16 0	30 0	29 0	20 0	200 0	200 0	200 0	8 0	9 0	8 0	Botól		
...	31 0	34 0	20 4	120 0	120 0	120 0	6 8	7 0	7 0	Chhindwára		
...	40 0	40 0	27 0	160 0	160 0	160 0	6 12	6 12	9 8	Hoshangabad		
...	30 0	28 2	21 7	120 0	120 0	120 0	9 7	10 10	10 12	Narsinghpur		
...	42 0	38 0	22 0	60 0	60 0	67 0	8 0	8 8	9 0	Nimár		
...	21 8	28 0	19 0	220 0	240 0	250 0	7 8	7 8	7 0	Raipur		
...	Sambalpur		
...	No return received			Bilásapur		
...	No return received			Upper Godávari		
Arakan Division.														
Akyab														
Kyauk-pyoo														
Sandoway														
Pegu Division.														
Rangoon (town)														
Thone-gkwa														
Bassein														
Honzada														
Tharrawaddy														
Prome														
Tha-yet-myo														
Tenasserim Division.														
Moulmein (town)														
Amherst														
Tavoy														
Mergui														
Shway-gyin														
Toungoo														
24 14	24 14	16 5	21 0	22 8	14 7	125 0	125 0	115 0	9 8	9 2	8 14	Secunderabad	HYDERABAD & SINDH DISTRICTS.	
...	24 7	24 7	14 2	116 14	116 14	116 14	9 8	9 8	9 5	Bolarum		
...	23 0	20 8	13 8	80 0	80 0	80 0	9 0	9 4	8 4	Chudalghat		
...	26 0	26 0	16 0	80 0	80 0	64 0	10 0	10 0	10 8	Amruti		
8 0	8 0	8 0	31 0	31 0	16 0	64 0	64 0	64 0	9 0	9 0	9 0	Akola		
...	26 0	26 0	14 0	64 0	64 0	64 0	9 0	9 0	8 0	Ellichpur		
...	30 0	32 0	17 0	...	...	...	10 0	10 0	8 0	Buldana		
...	20 0	20 0	13 8	100 0	100 0	100 0	8 0	8 0	8 0	Wán		
...	40 0	50 0	15 8	64 0	64 0	64 0	8 0	8 8	8 0	Basim		

PUNJAB—continued.

CENTRAL PROVINCES.

BRITISH BURMA.

HYDERABAD AND SINDH DISTRICTS.

[a] Barley falling.
 [b] Barley, bajra, jowar falling and firewood rising.
 [c] Barley and firewood falling.
 [d] Jowar falling.
 [e] Gram falling.

Prices Current of Food-grains throughout

[illegible]

for the 1st half of April 1881—concluded.

OF 80 TOLAHS.

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T. C. HOPE,

Secretary to the Government of India.

GOVERNMENT OF INDIA.
HOME, REVENUE AND AGRICULTURAL DEPARTMENT.

GEOGRAPHICAL CONGRESS AND EXHIBITION IN VENICE.

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- (A) CIRCULAR OF COMMITTEE ;
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THIRD INTERNATIONAL CONGRESS OF GEOGRAPHY UNDER THE HIGH PATRONAGE OF
H. M. THE KING OF ITALY—1881, VENICE, 1881.

ORGANIZING COMMITTEE, 26, *Via del Collegio Romano, ROME.*

SIR,

THE Committee for the Third International Exhibition of Geography has been formed since the end of November last, and it has framed the questions to be submitted to the Congress, as well as the Regulations for the Congress and for the Geographical Exhibition.

We enclose herewith a copy both of the Form of Questions and of the Rules, and we earnestly request all Geographical Societies and Students to lend us their co-operation and assistance.

The Questions have been restricted to a limited number of subjects, and only to such matters, with reference to which it may be expected that all Geographical Students may dispose of an interesting number of facts and researches.

It is not our purpose, of course, to confine the labours of the proposed Meeting within those limits ; and we will gratefully acknowledge any suggestions and additions which may be added to the subjoined Form of questions ; the authors of any such proposals will naturally be entitled to submit those questions and discuss them before the Congress. Communications to this effect will be received by the Committee up to April 1881 ; a definitive copy of the questions will subsequently be printed and sent to all subscribers.

With regard to the discussion of subjects not mentioned among the questions to be submitted, the rules of article 11 of the General Regulations for the Congress will be applied.

Geographical Societies and Students will greatly oblige us by kindly giving the greatest possible notoriety to the enclosed Papers, and we will be glad to provide them with a further supply of copies, at their request.

Geographical Societies are requested to procure the co-operation of eminent men of science, travellers, publishers and other persons whose concurrence might be useful to the furtherance of our object ; we may add that the care of each Department will be entrusted to the Foreign Commissioners to be appointed by the different Governments : a special request has already been submitted for the appointment of these Commissioners through the Italian Government.

Geographical Societies are also requested to appoint their special Delegates to the proposed meeting, and acquaint us with their names; in accordance with the Rules which have already been approved, the *Foreign Members of the Jury for the Geographical Exhibition* are partly to be taken from the Delegates of Foreign Societies.

*Signed — Prince of TEANO, President
of the Italian Geographical Society.*

P. BARIOLA,	}	<i>Vice-Presidents.</i>
G. F. CATTANEL,		
L. GERRA,		
G. MALVANO,		

G. DALLA VEDOVA, *General Secretary.*

REGULATIONS FOR THE CONGRESS.

Art. 1. The third Geographical Congress will be held in Venice from the 15th to the 22nd of September 1881; a Geographical Exhibition will be held at the same time, from September 1st to September 30th, of the same year.

Art. 2. The Congress and the Exhibition are placed under the high patronage of H. M. the King of Italy, and the Presidency of H. R. H. the Duke of Genoa.

Art. 3. The Congress and Exhibition are patronized by the Mayor of Venice, Count Dante Serego Allighieri, by Senator Prince Giuseppe Giovanelli of Venice, and by the two (Presidenti fondatori) of the Geographical Society, Comm. Cristoforo Negri and H. E. Comm. Correnti.

Art. 4. The Congress is composed of *honorary effective and adhering Members.*

Honorary Members will be appointed according to the Rules established by the Committee for the Congress.

The other Members will contribute viz.: *effective Members* 40 ital. Lire, *adhering Members* 15 Lire.

Art. 5. Every Member of the Congress will be entitled to a personal ticket, to take part in the proceedings of the Congress, to free admission to the Exhibition, and to a copy of the Transactions of the Congress, which will be published by the Italian Geographical Society.

Art. 6. The Congress will be divided into eight sections, viz.:

I. Mathematical Geography, Geodesy, Topography.

II. Hydrography.

III. Physical Geography, meteorological d°, geological d°, botanical d°, zoological d°.

IV. Anthropological, ethnographical and philological Geogr.

V. Historical Geography; history of Geography.

VI. Economical Geography: commercial and statistical d°.

VII. Methods, teaching and diffusion of Geography.

VIII. Explorations and travels.

Art. 6. Members of the Congress must give notice of the section or sections in which they desire to take part.

Art. 7. The Chairman of each section will be elected at each successive Meeting of that section;

A Vice-President and a Secretary will be appointed for each section, for the whole time during which the Congress is to last, as mentioned in article 9.

Art. 8. A *Committee of the Congress* will be entrusted with the general management of the Congress: it will be composed of the President of the Congress, of the President and Vice-Presidents of the Organizing Committee, of two special Delegates of the City of Venice, and of a Delegate for each of the Foreign Nations represented at the Congress.

The Vice-Presidents and secretaries of the different sections will also form part of the Committee of the Congress.

Art. 9. The Committee of the Congress will appoint, before the first Meeting, the permanent Vice-Presidents and secretaries of sections.

Art. 10. The time of proceedings, and other particulars, for the general and special Meetings, will be fixed and published in due time by the Committee of the Congress.

Art. 11. No questions can be introduced in the General or special Meetings except those mentioned in the list of questions, or put on the List of Motions.

Members desiring any question to be put on the list of Motions must address it to the Chairman of their own section, who will transmit it to the Committee of the Congress: the Committee will then decide on the advisability of inserting the question in the list of Motions.

Speakers may use any language they prefer.

Special regulations for the order of the proceedings may be framed by the Committee.

Art. 12. The resolutions of each section must be communicated, immediately after each Meeting of that section, to the Committee of the Congress.

Art. 13. The President or Secretary of each section will submit, in writing, in the general Meetings the resolutions taken by his section: the debate and division on those resolutions will be taken in the General Meetings.

Art. 14. A special seat will be kept for the Representatives of the Press who may desire to assist to the general Meetings, on special request addressed to the Committee of the Congress.

Art. 15. The Organizing Committee will be entrusted with the execution of the resolutions taken by the Congress.

Art. 16. Questions relating to the Congress which may arise during the proceedings will be submitted to, and decided by, the Committee of the Congress.

Rome, December 16, 1880.

QUESTIONS SOUMISES AU III^{me} CONGRÈS INTERNATIONAL DE GÉOGRAPHIE.

N. B.—Un mémoire sommaire sur l'état actuel de chaque question sera ajouté au questionnaire avant l'ouverture du Congrès.—Le nom du rapporteur est indiqué à la suite du paragraphe correspondant.

On a ajouté à cette liste des thèmes spéciaux, sur lesquels les proposant se chargent de faire des communications au Congrès.

I. GROUPE.

Géographie mathématique—Géodésie—Topographie.

1. Répétition à longs intervalles des nivellements de précision dans le but d'étudier les variations relatives des altitudes des principaux repères des différents pays. Nécessité d'avoir dans chaque pays des points fixes de départ des nivellements. Le choix d'un zéro unique pour l'Europe est-il possible et convenable dans l'état actuel, ou bien doit-on attendre de nouvelles études pour fixer le choix d'une localité quelconque ?

(Rapporteurs : M. le colonel Ferrero, vice-directeur de l'Institut topographique militaire italien—M. le prof. Betocchi, inspecteur du génie civil italien).

2. Etat actuel des déterminations télégraphiques des différences de longitudes. Vœux et propositions du Congrès pour le progrès de ces déterminations.

(Rapp. M. le prof. Lorenzoni, directeur de l'Observatoire astronomique de Padoue).

3. Quelles nouvelles mesures d'arc de méridien ou d'arc de parallèle faudrait-il faire dans l'intérêt d'une plus exacte connaissance de la figure de la terre et de la déviation de la forme ellipsoïdale approximative généralement acceptée, et quels sont les vœux que le Congrès croit émettre, dès à présent, à cet égard.

4. Attractions locales.

(Rapp. M. le prof. Schiaparelli, directeur de l'Observatoire astronomique de Brera, Milan).

5. Étude de la variation de la pesanteur à l'aide du pendule. Choix des points où il serait utile de faire de nouvelles observations.

(Rapp. M. le prof. Lorenzoni).

6. Utilité et limites de précision des déterminations altimétriques exécutées à l'aide du baromètre à mercure, de l'anéroïde, et de l'hypsomètre, et propositions relatives au meilleur moyen d'utiliser les observations faites avec ces instruments.

7. Perfectionnements apportés aux méthodes des levées topographiques. Application de la photographie.

(Rapp. Institut Topographique militaire du Royaume d'Italie).

II. GROUPE.

Hydrographie—Géographie maritime.

1. Études et recherches sur les lois des vents et des courants marins. Moyens d'en rendre les résultats pratiquement utiles à la navigation.

(Rapp. M. le capitaine de frégate Magnaghi, directeur du bureau hydrographique de la marine R. italienne.)

2. Quels sont les meilleurs moyens pour encourager les capitaines au long cours à faire et à présenter, au retour de leurs voyages, des observations météorologiques, magnétiques et hydrographiques dans des régions peu explorées.

(Rapp. M. Magnaghi.)

3. Études récentes sur les marées et phénomènes analogues ; lois générales et anomalies. Choix des positions les plus propres à l'observation de ces phénomènes. Relations entre les marées et les phénomènes météorologiques.

(Rapp. M. Magnaghi.)

4. Détermination de la température de la mer à différentes profondeurs. Instruments à employer. Quelles sont les zones où ces observations doivent être faites de préférence ?

(Rapp. M. Magnaghi.)

5. Sondages dans les grandes profondeurs. Dans quels parages, et à quels intervalles doivent-ils être exécutés ? Faits et observations à recueillir pour la solution des problèmes physiques qui s'y rattachent.

(Rapp. M. Magnaghi.)

6. Utilité d'uniformer les signes conventionnels pour la représentation des bancs, dangers, etc., conformément aux vœux exprimés au Congrès de Paris.

(Rapp. M. Magnaghi.)

7. Utilité de rattacher aux triangulations existantes les phares d'une position incertaine, et ceux qui sont en construction, afin de pouvoir les tracer avec précision sur les cartes marines, et fournir aux marins le moyen de régler leurs chronomètres. Les données trigonométriques relatives à l'emplacement devraient être jointes aux autres éléments du phare dans les communications que les Gouvernements se font entre eux.

(Rapp. M. Magnaghi.)

8. Quelles sont les côtes encore imparfaitement explorées, dont il conviendrait avant tout de faire la levée et quelles nations conviendrait-il d'inviter à faire ces travaux d'utilité générale ?

9. Des trirèmes italiennes au moyen-âge, et si leur type est le même que celui des trirèmes de l'antiquité.

(Rapp. M. le contre-amiral Fincati, avec modèle démonstratif préparé dans l'Arsenal de Venise.)

III. GROUPE.

Géographie physique—météorologique—géologique—botanique—zoologique.

1. Quels seraient les meilleurs moyens pour encourager l'étude de la météorologie et du magnétisme terrestre dans les régions polaires ?

(Rapp. M. le prof. Blaserna, directeur du R. institut physique de Rome et M. G. Cora, directeur du Cosmos.)

2. Dans quelles autres régions, outre les régions polaires, serait-il plus nécessaire et plus facile d'obtenir l'établissement de quelques nouvelles stations pour l'étude de la météorologie et du magnétisme terrestre, dans le but spécial d'étendre le réseau international météorologique et de compléter les cartes quotidiennes de l'état de l'atmosphère ?

(Rapp. M. le prof. Schiaparelli et M. Tacchini, directeur du bureau central de météorologie.)

3. Possédons-nous des éléments suffisants pour déterminer les prétendues variations de climat survenues depuis l'Antiquité jusqu'à l'époque actuelle sur les terres comprises dans le grand bassin géographique de la Méditerranée ?

4. Encourager l'établissement d'un système de mesurages altimétriques, rattaché aux points de repère géodésiques et aux marégraphes, pour la détermination des soulèvements et des abaissements du sol et des édifices sur différents points, soit de la côte, soit de l'intérieur.

Encourager également un système d'observations pour la détermination du déplacement horizontal de divers points du sol. Application du système à certains pays—à l'Italie, par exemple,—où de semblables phénomènes existent.

(Rapp. M. Uzielli, prof. de minéralogie à l'École R. d'application pour les ingénieurs, Turin.)

5. Détermination des anciens niveaux de la Méditerranée à différentes époques, en remontant des plus récentes aux plus anciennes, et en se servant de traces matérielles ou géologiques bien distinctes, comme : érosions de la mer sur les côtes — trous de lithophages — anciennes plages et vestiges sur d'anciens édifices.

(Rapp. M. l'ingénieur Giordano, inspecteur en chef des mines.)

6. Quels sont les effets importants pour la géographie, produits par le déboisement des montagnes ?

7. Quels sont les résultats obtenus de l'acclimatation des plantes australiennes en Europe et européennes en Australie ?

(Rapp. M. le prof. Pedicino, directeur du Jardin Botanique de l'Université R. de Rome.)

8. Quels résultats a produits la cultivation des plantes tropicales américaines et spécialement de la Cinchona dans les colonies anglaises et hollandaises des Indes orientales ?

(Rapp. M. le prof. Pedicino.)

IV^e. GROUPE.

Géographie anthropologique — ethnographique — philologique.

1. Quels arguments ou quelles inductions peut-on tirer des plus récentes études anthropologiques et glottologiques pour la connaissance de la distribution géographique des différentes races qui occupèrent l'Italie dans les temps historiques ?

(Rapp. M. l'ingénieur Hugues.)

2. Avec les matériaux recueillis jusqu'à présent sur la craniologie et la somatologie des races italiennes tracer un premier essai de carte ethnologique italienne.

(Rapp. M. le prof. Mantegazza, directeur de l'Institut R. des Études supérieures, Florence.)

3. Quels sont les restes encore existants des populations nord-africaines sur le continent, et sur les îles d'Italie ?

(Rapp. M. le prof. Mantegazza.)

4. Distribution des aliments nerveux.

(Rapp. M. le prof. Mantegazza.)

5. Serait-il possible aujourd'hui de résumer l'ethnographie de la Nouvelle-Guinée à l'aide des nombreux matériaux craniologiques et ethnographiques recueillis dans les dernières années par les explorateurs italiens ?

(Rapp. M. le prof. Mantegazza.)

6. Quelles sont les plus anciennes traces du peuple des palafittes ? à quelle époque a-t-il pénétré en Italie ?

(Rapp. M. le prof. Pigorini, directeur du Musée R. Préhistorique de Rome.)

7. Les populations néolithiques italiennes des cavernes et des *fondi di capanne* appartiennent-elles toutes au même groupe ? Leur industrie, leurs arts, sont-ils *pareils* ? Quels rapports y a-t-il entre ces gens et leurs contemporains du reste de l'Europe ?

(Communication du prof. Pigorini.)

8. Quelles sont les stations et les nécropoles de l'âge du bronze en Italie ; leurs rapports avec le reste de l'Europe ; quelle voie la civilisation du bronze a-t-elle suivie jusqu'en Italie ?

(Communication du prof. Pigorini.)

9. Le premier âge du fer en Italie est-il une suite de l'âge du bronze, ou bien est-il dû à une influence étrangère, dont il faudrait retrouver la voie ? Durant cette période les Italiens sont en relations commerciales avec les pays lointains ; quelles en furent les conséquences en Europe ?

(Communication du prof. Pigorini.)

10. L'Italie et ses îles ont-elles des monuments mégalithiques semblables à ceux de divers pays de l'Europe ? Doivent-ils être considérés comme l'œuvre d'une des populations des trois âges préhistoriques ?

(Communication du prof. Pigorini.)

11. Quelles sont les causes principales qui contribuèrent à la diminution et dans quelques cas à l'extinction graduelle de la population aborigène dans

beaucoup de régions, qui pourtant étaient très-peuplées avant l'établissement des colonies européennes ? Comment explique-t-on par contre l'augmentation sensible de la population indigène dans d'autres contrées ?

(Rapp. M. l'ing. Hugues.)

V. GROUPE.

Géographie historique — Histoire de la géographie.

1. Quelles règles devrait-on établir pour recueillir et coordonner de la meilleure manière les matériaux pour une Géographie historique de l'Italie au moyen-âge ?

(Rapp. M. le prof. Malfatti de l'Institut R. des Études supérieures Florence.)

2. Sur l'origine des noms anciens et modernes des vents et des points cardinaux, et spécialement des noms *nord, est, sud, ouest*, dont on fait généralement usage.

(Communication de M. le prof. Cusa, de la Université de Palermo.)

3. Discussion des documents relatifs à un cinquième voyage d'Améric Vespucci et aux navigations placées sous la direction de Juan de la Cosa ; examiner s'il est possible d'en tirer des déductions précises.

(Communication de M. l'ing. Hugues.)

4. Rechercher si l'on doit regarder comme authentique le voyage du florentin Jean Verazzano aux côtes américaines jusqu'au 50° de lat. nord, dont il laissa une relation en date de Dieppe, 8 juillet 1524.

(Communication de M. le Comte Amat di San Filippo.)

5. Ferdinand Colomb écrivit-il vraiment les *Historie*, c'est-à-dire la vie de son père ; ou bien faut-il considérer comme apocryphe la prétendue traduction, faite par Ulloa, d'un texte espagnol qu'on ne vit jamais ni manuscrit ni imprimé ?

(Communication de M. le Comte Amat di San Filippo.)

6. Quels furent les premiers constructeurs des cartes-planes avant celles de Mercator ?

(Rapp. M. De-Luca, prof. à l'Université R. de Naples et M. le prof. Cusa.)

7. Sur l'origine du *loch* ; à quelle nation peut-on en attribuer l'introduction ?

(Communication de M. le prof. Cusa.)

VI. GROUPE.

Géographie économique — commerciale — statistique.

1. Examiner dans quelle mesure les vœux émis par le VI^e Groupe du Congrès de Paris ont été réalisés, ou peuvent l'être, dans les différents pays.

(Extrait des Vœux du Congrès de Paris qui se rapportent à ce Groupe.)

2. Quelles sont, en Europe, les classes de la société qui fournissent le plus d'émigrants ? Rechercher les causes qui dirigent vers certaines régions déterminées les courants d'émigration.

(Rapp. M. le prof. Bodio, directeur de la statistique générale du Royaume.)

3. Quels sont les meilleurs moyens d'associer les intérêts commerciaux et les intérêts scientifiques en vue de favoriser les progrès de la Géographie et le développement du commerce ?

(Rapp. M. Brunialti, prof. de l'Université R. de Turin.)

4. Dans l'état actuel des communications entre l'Europe, l'Inde et la Chine, quelles sont, parmi les nouvelles voies projetées, celles qui offriraient au commerce le plus d'avantages ?

5. Quelles sont les meilleures voies de communication avec l'intérieur de l'Afrique et particulièrement avec les régions du Soudan et des grands lacs ? Quels sont actuellement le mode et la nature des échanges ?

(Rapp. M. Dalla Vedova, prof. de l'Université R. de Rome.)

VII.^e GROUPE.*Méthodologie — enseignement et diffusion de la Géographie.*

1. Déterminer l'idée scientifique de la Géographie et ses limites en relation avec les autres sciences.

(Rapp. M. le prof. Dalla Vedova.)

2. Rechercher si l'on doit établir une convention entre toutes les Sociétés de Géographie pour la transcription des noms de lieux et de personnes, en employant l'alphabet latin avec des lettres marquées par des signes particuliers.

(Rapp. M. le Sénateur M. Amari.)

3. Examiner dans quelle mesure les vœux émis par le VII.^e Groupe du Congrès de Paris ont été réalisés, ou peuvent l'être, dans les différents pays.

(Extrait des vœux du Congrès de Paris qui se rapportent à ce Groupe).

VIII.^e GROUPE.*Explorations et voyages géographiques.*

1. Examiner s'il est possible et convenable d'arriver, pour les autres groupes des voyages, à la constitution d'une association internationale semblable à celle instituée pour les voyages de l'Afrique.

2. Quelles sont les explorations qu'il serait urgent d'encourager, tant au point de vue de l'intérêt scientifique, qu'au point de vue des intérêts commerciaux ?

(Rapp. M. G. Cora.)

3. Sur les nouvelles méthodes qu'on pourrait employer pour lever rapidement les plans topographiques dans les explorations géographiques ?

CONCLUSIONS ET VŒUX DES GROUPES V ET VI DU II^e CONGRÈS INTERNATIONAL DES SCIENCES GÉOGRAPHIQUES TENU À PARIS EN 1875.

On a imprimé en caractère italique les paragraphes des questions soumises au Congrès de Paris sur lesquels les groupes ont formulé leur conclusions.

V.^{me} GROUPE.

Quels sont les causes générales qui portent les populations à émigrer et les Etats à fonder des Colonies ? Quels sont les systèmes de colonisation qui ont donné jusqu'ici les résultats les plus avantageux à la métropole, d'une part, à la colonie d'autre part ?

(Question n. 90 de la liste des questions soumises au Congrès international de 1875.)

Quelles sont, en Europe, les classes de la société qui fournissent le plus d'émigrants ? Rechercher les causes qui dirigent vers certaines régions déterminées les courants d'émigration (Question n. 92).

De la main-d'œuvre agricole dans les pays intertropicaux. Quelles races d'hommes sont les plus aptes à la fournir ? (Question n. 92.)

Le Congrès exprime le désir que tous les gouvernements publient régulièrement les documents statistiques et autres relatifs à l'émigration de leurs nationaux et des étrangers qui émigrent par leurs ports, ainsi qu'au retour dans leur pays des personnes qui ont émigré. (Page 502 du compte rendu des séances du Congrès International des sciences géographiques, Paris.)

Les conclusions et les vœux suivants formulés dans un rapport rédigé au nom d'une sous-commission sur les questions, N. 90, 91 et 92 sont adoptés à l'unanimité par le Groupe V. (Page 512.)

1. Formation d'une Commission internationale permanente qui, étant composée de membres nommés par les gouvernements civilisés s'intéressant aux questions d'émigration, aura le rôle de reconnaître les bonnes conditions d'émigration, des gens de toute race, de tout pays, pour toute destination.

2. Que dans chaque nation civilisée, les hommes éclairés forment de libres sociétés d'étude des questions d'émigration, de colonisation et de commerce extérieur. (Page 531.)

Quels sont les meilleurs moyens d'associer les intérêts commerciaux et les intérêts scientifiques en vue des progrès de la géographie et du développement du commerce ? (§ 1^{er} de la question n. 93.)

Le Groupe V du Congrès approuvant en principe l'institution des Chambres syndicales et des syndicats généraux, manifeste le désir de voir perfectionner leur organisation par une préoccupation plus vive des intérêts scientifiques dans les associations commerciales et des besoins du commerce dans les corps consulaires (Page 504).

Reconnaissant que le meilleur moyen d'associer les intérêts commerciaux et les intérêts scientifiques en vue du progrès de la Géographie et du développement du commerce, est d'établir et d'entretenir des rapports permanents et un échange suivi de communications entre les sociétés de géographie et les représentants des intérêts commerciaux, le Groupe V^{me} du Congrès international des sciences géographiques émet le vœu :

Qu'il soit créé dans tous les centres où cela est possible des organisations commerciales semblables aux chambres syndicales de Paris, et aux chambre de commerce du Royaume-Uni et du Canada, et qu'elles soient reliées à la Société de Géographie la plus rapprochée de leurs sièges et par une commission mixte, à l'instar de la Commission de géographie commerciale établie à Paris. (Page 510.)

Indiquer les voies de communication créées ou projetées qui nécessitent, soit des percements d'isthmes, soit la construction de ponts tabulaires sur des bras de mer, soit le creusement de tunnels sous la mer ou à travers les chaînes de montagnes (§ 1^{er} de la question n. 94.)

L'assemblée formule le vœu que les gouvernements des États intéressés à ces grandes entreprises en poursuivent les études avec le plus d'activité possible, s'attachent aux tracés qui présentent à la navigation les plus grandes facilités d'accès et de circulation (page 508).

Étudier les voies de communication avec l'intérieur de l'Afrique et particulièrement avec les régions du Soudan et des grands lacs. Quels sont actuellement le mode et la nature des échanges ? Chercher quelle influence économique pourrait avoir la création d'une mer intérieure par un canal faisant communiquer la Méditerranée avec le lac Mel-Rhir (question n. 97).

Le vœu suivant est adopté par le V Groupe.

Le Groupe V, considérant l'intérêt qui au double point de vue scientifique et économique, s'attache à la question de la mer intérieure à créer au sud de la Tunisie et dans l'Algérie, propose au Congrès d'exprimer la vœu de voir exécuter en Tunisie des études de nivellement analogues à celui que la mission française des chotts, sous les ordres de M. le capitaine Roudaire, a exécuté en Algérie, complétant le travail géologique et topographique de M. Fuchs, et tenant compte des études généreusement entreprises par la Société de géographie italienne et déjà exécutées sur une partie de la côte et notamment par l'isthme de Gabès, entre la mer et la premier chott. (page 511).

Le Groupe V émet le vœu que la proposition suivante soit mise à l'étude :

Créer dans l'oasis d'In-Calah, et en dehors des villes existantes, une *funde* analogue à celle que les États européens du moyen âge possédaient dans les pays barbaresques. — Cette *funde* serait administrée par un Consul français : elle serait ouverte à tous les Européens, sans distinction de nationalité, venus dans le Sahara central soit pour des explorations scientifiques, soit pour des explorations commerciales (page 511).

VI^{me} GROUPE.

Quelles sont les meilleures méthodes d'enseigner la géographie et quels sont les moyens pratiques de donner plus de popularité à l'étude élémentaire de cette science. (Question n. 102).

Il y a lieu de blâmer l'aridité de la plupart des traités actuels de géographie. Il faut que dans l'enseignement élémentaire, les détails qui s'oublient facilement soient supprimés, que les nombres soient arrondis, que l'intérêt soit amené par de récits pittoresques et des faits frappants de tout ordre et non pas seulement pris dans les sciences naturelles. (page 533).

Quels doivent être les caractères des études géographiques dans les différentes branches de l'enseignement primaire, secondaire, et supérieur ? (Question n. 104).

L'enseignement primaire de la géographie doit être surtout intuitif, procéder du connu à l'inconnu, amener dès le début l'élément topographique en commençant par représenter en plan, et autant que possible en relief, le terrain de l'école, du quartier, de la commune, des environs, passant de la carte topographique de la contrée connue des enfants, aux cartes géographiques des pays qui leur sont inconnus, puis à la Terre entière. L'usage d'un globe pour la notion des continents et des océans est une nécessité, et celui des projections savantes, y compris la mappemonde, doit être écarté des commençants. Les promenades topographiques, les reliefs exacts et les images pittoresques, les croquis de cartes simplifiées à main-levée et de mémoire sont de puissants moyens de progrès. Il est indispensable d'introduire dès le début et de mener de front, à l'occasion, les premières notions cosmographiques, points cardinaux, horizon, forme et dimension de la Terre, mouvement réel sur elle-même et autour du soleil, saisons, zones, et climats et les notions les plus simples de physique terrestre et d'histoire naturelle (page 537).

Dans l'enseignement secondaire, les classes d'histoire et celles de géographie doivent être confiées à des professeurs différents (page 540).

Il est désirable que le nombre des heures consacrées à l'enseignement de la géographie soit augmenté dans les établissements d'enseignement secondaire et porté à un minimum de deux heures par semaine pendant toute la durée des classes (page 542).

L'enseignement secondaire de la géographie doit avoir un caractère descriptif et cartographique. Le géographie physique, la géographie politique et la géographie économique doivent marcher concurremment dans la description de chaque pays; la raison d'être de tous les faits importants ne doit jamais être négligée. Enfin il est à désirer que le programme des études secondaires couronne l'enseignement géographique par une étude générale qui comprenne l'intelligence des faits de l'ordre cosmographique, physique et mathématique, et qui soit une sorte de philosophie de la géographie (page 543).

L'enseignement supérieur de la géographie considéré sous le triple point de vue de l'étude astronomique, physique et humaine de la terre, doit être scientifiquement explicatif plutôt que descriptif. Vu l'étendue de cette science il y a lieu de fonder dans les universités une faculté de sciences géographiques, de créer un diplôme de docteur ès sciences géographiques, enfin d'établir dans les écoles normales supérieures une section spéciale de géographie (page 545).

Comme conséquence du vote du Congrès entier, qui a décidé que l'enseignement de l'histoire et celui de la géographie doivent être confiés à des professeurs différents, le Groupe VI^{me} demande la création aussi rapide que possible : 1° De chaires spéciales de sciences géographiques dans les universités et facultés. 2° D'un diplôme de professeur de sciences géographiques (page 546).

Dans quelles mesure la topographie doit-elle entrer dans l'étude de la Géographie et comment les cartes topographiques peuvent-elles servir à l'enseignement aux différents degrés ? (Question n. 104 bis.)

Quelque soit le meilleur système fourni à l'avenir pour faire sentir les saillies du globe il est désirable que la nation des courbes de niveau soit introduite dans le tracé de toutes les cartes géographiques élémentaires (page 549).

Quels instruments géographiques doit-on mettre à la disposition des établissements d'instruction et quelle peut être la meilleure installation de ces instruments (Question n. 106).

Le Groupe VI^{me}, persuadé que l'enseignement par les yeux est un moyen puissant et expéditif d'initier les élèves aux sciences où les contours, les positions et les formes ont un rôle important, exprime le vœu que l'on mette à la portée des élèves, dans un lieu souvent fréquenté par eux :

1° Des reliefs géographiques naturels et à diverses échelles.

2° Des reliefs géographiques avec des hauteurs aussi peu exagérées que possible, destinés à donner une vue d'ensemble de l'orographie d'une contrée.

3° Des globes terrestres pour montrer dans leurs véritables formes et leurs positions relatives les continents et les mers.

4° Des tableaux graphiques qui condensent d'une manière frappante, par des sinuosités de lignes ou de comparaisons de surfaces, les grands faits de la géographie physique et de la géographie économique.

5° Des paysages, des dessins de plantes, d'animaux, de types humains, des vues stéréoscopiques et des photographies propres à donner une idée juste des productions et des habitants des diverses contrées.

6° Des instruments le plus simples et le plus populaires des opérations sur le terrain qui sont à la portée de tout le monde.

7° Enfin une bibliothèque choisie, surtout d'ouvrages descriptifs où la cartographie et l'imagerie occuperont une grande place (page 547).

Quels établissements nouveaux pourrait-on créer pour favoriser les travaux et les connaissances géographiques ? Quels sont les moyens de coordonner et de développer les travaux des sociétés de géographie et d'en tirer tous les avantages désirables ? (Deux derniers § de la question n. 107).

Il est désirable que des musées pédagogiques soient créés dans tous les pays et que l'on commence par y organiser la partie géographique.

La proposition de rendre les rapports plus fréquents et les réunions plus rapprochées provoque une discussion d'où résulte la conclusion suivante :

Le Groupe VI^{me} émet le vœu qu'en attendant l'organisation d'un Congrès général il y ait des réunions de Commissions créées dans l'intérêt pédagogique et convoquées par le bureau du Congrès actuel.

On émet aussi le vœu qu'une revue internationale, imprimée en caractères romains, soit créée pour assurer la permanence des relations géographiques inaugurées par les Congrès d'Anvers et de Paris. (page 550).

REGULATIONS FOR THE EXHIBITION.

Art. 1. The International Exhibition of Geography will be opened in Venice on the 1st of September 1881 and last up to the end of that month.

The general management and supervision of the Exhibition will be entrusted to the Organizing Committee and to the Committee of the 3rd International Congress of Geography.

Art. 2. The Exhibition will comprise books, maps, instruments and apparatuses, and all other objects belonging to the eight following Classes, viz. :

I. Mathematical Geography, Geodesy, Topography.

II. Hydrography.

III. Physical geography, meteorological do. geological do. botanical and zoological do.

IV. Anthropological Geography, ethnographical and philological do.

V. Historical Geography, History of Geography.

VI. Commercial Geography : economical and statistical do.

VII. Methodology, teaching and diffusion of Geography.

VIII. Explorations and travels.

Art. 3. Foreign Exhibitors will be represented by the Commissioners specially appointed by their own Governments; correspondence relating to the Exhibition must be addressed to the Commissioners.

Art. 4. Italian Exhibitors must write directly to the Committee.

Art. 5. Should any reduction be necessary for want of space, preference will be given to such objects as have never been exhibited before or which have been modified since they were first exhibited.

Art. 6. An *International Jury*, to be appointed hereafter, will award the prizes, viz. :

I. 1st Class medals.

II. 2nd Class do.

III. Honorable mentions. (Mentions honorables).

Art. 7. The International Jury will be composed of Italian and foreign delegates, and divided into eight sections, corresponding to the eight sections of

the Exhibition; the number of Italian members will not be superior to that of their Foreign Colleagues.

A special set of Regulations, framed by the Committee of the Congress, will determine the mode of appointment and the proceedings of the Jury.

Art. 8. Applications for admission must be sent to the Committee before May 15th, 1881.

Foreign Exhibitors must send their demands through their own Commissioners.

Forms of application will be supplied, on request, in Italy by the Committee (1st section 26 Via del Collegio Romano, ROME, or 3rd Section, Municipal Palace, VENICE, and abroad, by the different Commissioners.

Art. 9. For information as to the delivery of articles etc., exhibitors or their agents must communicate with 3rd Section of the Organizing Committee for the Geographical Congress in Venice.

Art. 10. Foreign Commissioners will alone decide on the admission or exclusion of objects belonging to foreign exhibitors; objects belonging to Italian exhibitors will be examined by a special Board, appointed by the Committee.

Art. 11. All objects must be delivered, free of charge, to the 3rd section, in the Royal Palace in Venice, between June 15 and July 30, 1881.

Exhibitors must, at the same time, present two copies of the list of objects sent by them, to the Representative of the 3rd Section.

The inventories will be signed by both parties, when found true, and one of the copies will be given back to the Exhibitor, the other remaining with the Representative of the 3rd Section.

Art. 12. Foreign Commissioners will have to furnish and prepare their own sections, at their own expense: the Italian section will be furnished and prepared at the expense of Committee.

The Committee of the Congress will take proper measures for the safety of the objects exhibited, after consulting the wishes of the Exhibitors and Commissioners.

Art. 13. Special facilities will be asked from the Railway and steamship Companies, and Custom House authorities, for the conveyance of objects to and from Venice, and early notice to this effect will be sent to Exhibitors.

Art. 14. Section 3rd will take measures for preparing a complete catalogue, divided in nations and classes and provided with an alphabetical index of Exhibitors and of articles exhibited.

Art. 15. None of the articles exhibited can be drawn, copied or otherwise reproduced without special permission of the Exhibitor.

General views of the Exhibition cannot be taken without special permission of the Committee of the Congress.

Art. 16. No object can be withdrawn before the closing of the Exhibition, except by a special permission of the Committee of the Congress.

Art. 17. Exhibitors must withdraw their property, at their own expense, not later than October 25, 1881.

After that date, objects will be removed at the expense of their proprietor, from the Palace of the Exhibition, and deposited at their expense.

Art. 18. Exhibitors will receive a free pass, which will be strictly personal.

Art. 19. All matters not mentioned in the foregoing articles, will be decided by the Committee of the Congress.

Rome, December 16, 1880.

The President of the Committee
TEANO.

The Vice-Presidents

for the 1st Section :—MALVANO

for the 2nd „ —BARIOLA

for the 3rd „ —CATTANEI

for the 4th „ —GERRA

The General Secretary
DALLA VEDOVA.

SISTEMA DI CLASSIFICAZIONE DEGLI OGGETTI DESTINATI ALLA MOSTRA.

CLASSE I.

Geografia matematica, geodesia, topografia.

Istrumenti di geometria pratica. — Apparecchi e instrumenti di topografia, geodesia ed astronomia. — Telemetri e instrumenti di celerimensura. — Tavole di proiezione e di calcoli. — Carte dimostrative dei vari sistemi di proiezione. — Carte siderali; carte di triangolazione; carte ipsometriche. — Carte topografiche fondamentali. — Pubblicazioni relative alla misura della terra. — Applicazioni della fotografia.

CLASSE II.

Idrografia, geografia marittima.

Istrumenti portatili e di precisione relativi all'idrografia. — Strumento a riflessione. — Cronometri marini e tascabili. — Solcometri (*logs*), scandagli, draghe; saggi di fondo del mare; termometri per la misura della temperatura alle diverse profondità. — Mareometri e misuratori delle correnti. — Bussola e altri instrumenti nautici (quartiere di riduzione, parallele, regoli, ecc.). — Carte marine generali, costiere, particolari; piani di porti, di ancoraggi. — Vedute delle coste. — Carte delle correnti, dei venti, e delle mare. — Tavole ed effemeridi ad uso degli astronomi e dei marinai. — Pubblicazioni relative all'idrografia ed alla geografia marittima. — Guide di navigazione; elenchi di fari; fanali ecc. — Proposte per l'unificazione del sistema internazionale di mode, gavitelli e segnali di scoperta, e pel complemento dell'illuminazione delle coste. — Rosa dei fili telegrafici sottomarini.

CLASSE III.

Geografia fisica, meteorologica, geologica, botanica, zoologica.

Istrumenti relativi all'osservazione dei fenomeni meteorici. — Carte, atlanti, globi rappresentanti i fatti spettanti al dominio della geografia fisica e della meteorologia. — Carte magnetiche (isoclini, isogone, isodinamiche). — Carte isobari, isotermiche, ecc. — Carte di geografia geologica, zoologica e botanica. — Altre pubblicazioni e collezioni relative.

CLASSE IV.

Geografia antropologica, etnografica, filologica.

Carte ed atlanti riferentisi all'antropologia generale, all'etnografia ed alla filologia comparata. — Altre pubblicazioni e collezioni relative. — Grammatiche e vocabolari di lingue poco note; studi comparativi.

CLASSE V.

Geografia storica, storia della geografia.

Carte ed altre pubblicazioni di geografia storica. — Opere e manoscritti antichi e moderni relativi all'istoria della geografia. — Carte e globi antichi. — Istrumenti che servirono agli antichi geografi; astrolabi, ecc..

CLASSE VI.

Geografia economica, commerciale, statistica.

Opere, carte e diagrammi di geografia statistica, economica e commerciale (popolazione, agricoltura, industria, commercio, lavori pubblici, colonizzazione, ecc.). — Collezioni di prodotti e di oggetti commerciali, fatte dal punto di vista geografico.

CLASSE VII.

Metodologia, insegnamento e diffusione della geografia.

Trattati e metodi per l'insegnamento della geografia. — Profili e paesaggi, carte murali; modelli e strumenti destinati all'insegnamento della geografia. — Atlanti e dizionari geografici. — Carte e mappamondi terrestri e celesti; globi. — Carte topografiche riprodotte; carte e piani in rilievo. — Metodi diversi di riproduzione delle carte (fotografia, eliografia, litografia, zincografia, fotolitografia, cromolitografia, ecc.). — Materiali ed apparecchi specialmente impiegati nella preparazione delle carte.

CLASSE VIII.

Esplorazioni e viaggi geografici.

Istrumenti per le determinazioni astronomiche e levate topografiche speditive; barometri e termometri da viaggio, podometri, sestanti, ecc. — Apparecchi fotografici portatili; camere chiare. — Carte itinerarie; carte sommarie. — Saggi *fac-simili*, riproduzioni e collezioni d'ogni specie, che illustrino viaggi d'esplorazione; vedute fotografiche e disegni di contrade poco esplorate. — Istruzioni pei viaggi geografici. — Arredo ed equipaggiamento di un esploratore; armi, utensili, tende, farmacie portatili; imbarcazioni portatili; coperte e vestiti impermeabili; apparecchi d'illuminazione per le marcie notturne e per gli accampamenti. — Modi d'imballaggio e trasporto per viaggi di esplorazione. — Relazioni e pubblicazioni d'ogni sorta relative ai viaggi geografici. — Pubblicazioni ed attrezzi relativi all'alpinismo.

Il Presidente

TEANO.

Il Segretario generale

DALLA VEDOVA.

INSTRUCTIONS RELATING TO FOREIGN COMMISSIONERS AND DELEGATES.

1. Each Government is requested to appoint one or more Commissioners for the International Exhibition of Geography to be held in Venice, one Delegate to act as Member of the Committee for the Exhibition, as well as one Delegate to act as Member of the International Jury.

2. The objects for which Foreign Commissioners are appointed are the following:

a. to promote, in their own Countries, the diffusion of information and Papers relating to the Exhibition, and the co-operation of the different Governments and Nations.

b. to receive in Venice the different objects to be exhibited in their respective Departments, and direct the fitting up and organization of those Departments, in accordance with the Rules established for the Exhibition.

3. Commissioners are requested to transmit the forms of application filled up by intending exhibitors, to the Committee in Rome, before May, 15, 1881 (art. 3 of Regul.); objects must be sent to VENICE, between June, 15, and July 31, 1881 (art. 9 of Regulations).

4. The Exhibition will be held in the Royal Palace in Venice, in the Place of San Marco, graciously granted by H. M. KING HUMBERT. A room or part of a room will be assigned to each Nation. Commissioners will be free to fit up and adorn their own Departments, classing objects according to the eight categories mentioned in the Regulations. The rooms being only six metres high, care should be taken that objects sent to the Exhibition should not exceed those dimensions. The necessary arrangements with reference to this point and all matters of a general nature, will be taken by the Commissioners concurrently with the 3rd Section of the Organizing Committee.

5. It being impossible to determine, even approximately, the space which will be required by each Nation, the Committee think it their duty to point out that, should a reduction be necessary, early notice will be sent to Foreign Commissioners, not later than the first fortnight in May, 1881. Any reduction which might be necessary will be made with the concurrence of Foreign Commissioners, as established in art. 5 of Regulations.

6. A list showing the different classes of objects which may be admitted to the Exhibition is appended to these instructions.

7. Foreign Commissioners will be alone entitled to decide what objects are to be admitted in their own Departments.

8. Commissioners may represent, both their own Governments and the Geographical Societies of their Countries.

9. The local Committee residing in Venice will give Foreign Commissioners all information and assistance in fitting up and organizing their special sections.

10. Correspondence is to be addressed, up to May 30, 1881, to the *Committee in Rome*; after the 30th of May, 1881, letters and communications are to be sent to the *3rd Section of the Committee, in Venice*.

(signed.) TEANO

DALLA VEDOVA, *Secretary*.

THIRD INTERNATIONAL CONGRESS OF GEOGRAPHY, 1881 — VENICE — 1881.

COMMITTEE.

26 — *Via del Collegio Romano, Rome.*

Members of the Congress are either honorary, or effective, or adhering Members.

Honorary Members will be appointed according to the Rules framed by the Committee.

Effective Members are all persons contributing an amount not inferior to ital. lire 40 (Ls. 1. 10 sh.).

Adhering Members are all persons contributing 15 Italian Lire.

The names of honorary Members will be published on a separate list.

Every Member will be entitled to a free pass to the meetings, a ticket for the Exhibition, and a Copy of the Transactions of the Congress. Members will also be entitled to any facilities for travelling on Railway and Steamship lines, which the Geographical Society may obtain for them.

Intending subscribers are requested to fill up and send to the address printed on the back the following form; they will receive in due time the necessary papers for admission to the Congress, reductions on Railway lines, etc.

FORM OF SUBSCRIPTION.

(1) Name in full.	The undersigned (1) _____
(2) Address and nationality.	_____ residing at (2) _____
(3) Adhering or effective Member.	_____ wishes to take part as (3) _____ Member in the
(4) Mode of payment: a cheque or bill as below.	<i>I.d. International Congress of Geography to be held in 1881 and undertakes to pay (4) _____</i>
(5) Ital. lire 40, or 15, or more.	the sum of (5) _____
	(Date) _____ 188 _____
	(Signature) _____

Please write very legibly.

PAYMENT OF SUBSCRIPTION MAY BE MADE

1. In cash, to the Geographical Society, 26, Via del Collegio Romano, Rome.
2. By a post office order addressed to the Italian Geograph. Society, 26, Via del Collegio Romano, Rome.
3. By a cheque or bill on a banker in Rome, to the order of the said Society.

THIRD INTERNATIONAL CONGRESS OF GEOGRAPHY, VENICE, 1881.

Form of application for admission to the Exhibition.

No. _____

NUMBER OF CLASS _____

Name in full (or name of firm) _____		The undersigned undertakes to stand by the Regulations for the Exhibition, dated 16th December 1880.

Nationality and Residence : _____		
Description of objects : _____		

Prizes, medals, &c., obtained in former Exhibitions.		

<i>Front space required.</i> Width Meters _____ Height _____ Depth _____		<i>On the wall.</i> Width Meters _____ Height Meters _____
		Signature of Commissioner or of Delegate of the Italian Committee.

GOVERNMENT OF INDIA.

HOME, REVENUE AND AGRICULTURAL DEPARTMENT.

REPORTS ON THE STATE OF THE SEASON AND PROSPECTS OF THE CROPS FOR
THE WEEK ENDING THE 10th MAY 1881.

GENERAL REMARKS.—With the exception of slight showers in a few places and a heavy fall in the Southern Mahratta Country, no rain is reported from Western, Central, or Upper India. In Assam, Bengal, and Burma, and in the Madras Presidency and Mysore, rain was pretty general, but for the most part moderate; more is wanted in Mysore and in several districts of Bengal. In other districts of the Lower Provinces the rain has refreshed the standing crops and facilitated sowings. Less small-pox is reported than in the preceding week. Cattle-disease continues in many places. No change is observable in general prospects, which remain good almost everywhere. The heat, in many parts of the country, is now great.

Presidency or Province and District.	Rainfall for week preceding.	State of agricultural prospects.
Madras—(May 11th)		
Bellary	34 (one station)	Standing crops generally good; harvest wet and dry crops, yield average; sugarcane being sown; fever in parts.
Kurnool	27 (average of two stations).	Harvest second crop paddy in parts, yield about average; cattle-disease in parts.
Ganjam	.....	Second crop, paddy and <i>ragi</i> , flourishing.
Kistna	Nil	
Chingleput (Madras)	Nil	Crops withering in parts; harvest paddy and <i>ragi</i> ; cultivation operations for new season progressing; small-pox prevalent; cattle-disease abating.
Coimbatore	94 (average of fourteen stations).	Crops generally fair; harvest wet and dry crops, outturn about average.
Tanjore	10 (one station)	Standing crops good; harvest dry crops, outturn average.
Madura	77 (average of ten stations).	Standing crops drooping from deficiency of water-supply.
Malabar	69 (average of twelve stations).	Sowing of first crop, paddy, commenced; small-pox in parts slight.
Travancore	Nil	Harvest later paddy, average; preparations for paddy, new season, progressing; small-pox and fever prevail to some extent.
Bombay—(May 11th)		
Kurrachee	Nil	River at Kotri 6½ feet on 9th, against 6½ feet on same date last year; two cases of small-pox in Dadu, one in Sehwan; <i>kharif</i> sowings commenced; wheat, red rice, and <i>bajri</i> in Kurrachee 11, 18 and 17, in Dadu 14, 12 and 14, in Sehwan 14½, 17 and 17, in Manjhand 16, 18 and 18 seers per rupee respectively; locusts appeared in Tatta taluka, no damage.
Hyderabad	.....	<i>Rabi</i> harvesting nearly over; <i>kharif</i> operations commenced in some parts of the district; small-pox and fever in five and measles and cattle-disease in two talukas; locusts about; river at same height as last year; weather reasonable; wheat 12, <i>bajri</i> 21, <i>jowari</i> 20, red rice 14½, and white rice 9 seers per rupee.
Ahmedabad	.....	Manuring operations for next season going on; heat at its height; wheat 36 and <i>bajri</i> 55.
Baroda	.....	Summer crops in Karri division and sugarcane in Nowsari thriving; public health good; weather reasonable; <i>bajri</i> 40½ and rice 25 lbs. 5s. per rupee.
Surat	.....	<i>Rabi</i> harvest nearly completed; preparation for sowing commenced in places; fever in four talukas; <i>jowari</i> 43 and <i>nagli</i> 40 lbs.
Nasik	.....	<i>Rabi</i> threshing nearly completed; fever in two talukas; <i>bajri</i> 43, wheat 35, and <i>jowari</i> 53.
Colaba (Bombay)	.....	Abnormal temperature rose from nil on 4th to 2° warm on 6th, and then remained steady till the end of the week; vapour in air in excess of normal; abnormal wind northerly on 4th and southerly from the 5th till the end of the week, strong from 6th to 9th.
Poona	.....	Average prices— <i>bajri</i> 46 and <i>jowari</i> 67 lbs., in Poona <i>bajri</i> 46 and <i>jowari</i> 57 lbs.
Ahmednagar	.....	Ague in Karjat; cattle-disease in Jamkhed, Karwat, and Newasa; <i>bajri</i> maximum 72 lbs. in Jamkhed, minimum 51 in Kopergaon; <i>jowari</i> maximum 96 in Newasa, minimum 66 in Kopergaon.
Sholapur	.....	Public health good; <i>jowari</i> 85·68 and <i>bajri</i> 65·24 lbs.
Dharwar	Heavy rain in Karajgi, slight in six talukas.	Rain urgently wanted in Dharwar and Kod; late crops harvested; fields being prepared for early crops; rice 32 and <i>jowari</i> 98 lbs.; slight fever; cattle-disease decreasing.

Presidency or Province and District.	Rainfall for week preceding.	State of agricultural prospects.
Bombay—contd.		
Kanara .....	.....	No report received.
Rajkot .....	.....	Weather very hot; health generally good; <i>bajri</i> 48 and <i>jowari</i> 56 lbs.
<i>General Remarks.</i> —Rain in several of southern districts, heavy in parts of Belgaum and Dharwar; land being prepared in many parts for monsoon crops; locusts in Sind and Belgaum, but no damage; heat great; public health fair.		
Bengal—(May 10th)		
Chittagong ...	5.52	Weather stormy on the 4th and 5th, since warm and close; <i>pania aus</i> being sown; prospects of crops good; small-pox and cattle-disease still reported.
Dacca ...	Nil	Prospects favourable.
24-Pergunnahs ...	Nil	Rain wanted; no other crops on the ground, except <i>boro</i> seedlings at Satkhira and sugarcane; lands being ploughed for early rice and jute; common rice at head-quarters 16 to 20 seers, and in sub-divisions 20 to 26 seers; cholera still prevails in Diamond Harbour, Baraset, Basirhat, and Satkhira.
Moorshedabad ...	1.59	State and prospects of crops good; later rain has softened the soil for ploughing for <i>aus</i> ; sowings already commenced in parts; fever and cholera prevail here and there in a mild type; small-pox much mitigated.
Rajshahye ...	2.15	Weather somewhat cooler; standing crops, such as <i>til</i> , jute, and <i>boro</i> paddy thriving, though some damage was done by hail to <i>boro</i> paddy in Godagari; <i>aus</i> and <i>amun</i> paddy still being sown; prices unchanged; rain has caused slight abatement of cholera.
Burdwan ...	1.13	Weather cooler than preceding week; rain generally wanted, except in Cutwa; cholera abating.
Rungpore ...	1.19	Weather cool; crops good; cholera in some parts and some cases of small-pox.
Bhagalpur ...	.40	Lands being prepared for <i>bhadoi</i> sowings; sugarcane growing well; rice 24 seers; a good deal of small-pox and a few cases of cholera.
Purneah ...	.14	Prospects of crops improved by recent rain; ploughing still going on; rice 28 seers; a little cholera and much fever; rivers low.
Patna ...	Nil	Easterly wind prevailing; prospects of <i>cheena</i> and sugarcane good.
Durbhanga ...	.29	Rain with hail and storm; <i>moong</i> and <i>dhan</i> germinated; fields being prepared for <i>bhadoi</i> ; prices of food unchanged; general health good.
Hazaribagh ...	Nil	Weather very hot; no crops, except sugarcane, promising; rain much wanted for ploughing; rice 23 seers; public health good.
Cuttack ...	Nil	Rain wanted; ploughing in progress; small-pox still prevails.
<i>General Remarks.</i> —Moderate rain in many districts during week, benefiting standing crops and accelerating ploughing and sowings; it is still wanted in several districts, though prospects continue favourable; sugarcane promising; <i>rabi</i> harvest nearly over, result generally good; <i>boro</i> and <i>dalua</i> paddy being harvested in places; sowings of early crops progressing, and land being prepared for main rice crop; cholera generally prevalent, but abating in places; prices easy.		
N. W. Provinces and Oudh—		
Benares (May 11th)	Heavy shower	Weather during week hot; east wind prevailing; dust-storm last night, followed by heavy shower; weather to-day cooler; sky overcast; cholera still continues in city and outskirts; prices stationary; supplies plentiful.
Allahabad (" ")	Nil	Easterly winds; cholera and small-pox subsiding; melon harvest in yield poor; <i>rawe</i> rice and <i>juar</i> , all prices slightly risen; wheat 19 ¹⁰ ₁₀ , barley 26 ¹⁰ ₁₀ , gram 22 ¹⁰ ₁₀ , coarse cleaned rice 14 ¹⁰ ₁₀ , unhusked rice 25 ¹⁰ ₁₀ , <i>bajra</i> 24 ¹⁰ ₁₀ , and peas 26 ¹⁰ ₁₀ seers.
Gorakhpur ( " " )	.....	Weather seasonable; health fair; some cholera in all tahsils, but not severe; small-pox in three tahsils; <i>rabi</i> still being threshed in two tahsils; prices rising slightly.
Jhansi ( " " )	.....	Manuring of fields in progress; markets well supplied; prices fluctuating; wheat 22 ¹⁰ ₁₀ , gram 26, and <i>bajra</i> 25 seers; cattle-disease continues.
Agra (" ")	Nil	Wheat 19, gram 19, barley 23, <i>bajra</i> 23, <i>makka</i> 28 seers.
Barilly ( " " )	.....	Wind east; weather clear and hot; health fair; outturn of <i>rabi</i> mostly good; prices of grain—wheat 21 ¹⁰ ₁₀ , barley 28 ¹⁰ ₁₀ , <i>bajra</i> 23, common rice 15 ¹⁰ ₁₀ , gram 21 ¹⁰ ₁₀ seers per rupee.
Meerut ( " " )	.....	Strong dusty east wind; cholera two fatal cases, cantonments two cases, one fatal Moradnagar circle, otherwise health good; prices rising; cheapest wheat 21 ¹⁰ ₁₀ , gram 22, barley 29, <i>bajra</i> 19, <i>juar</i> 22, <i>arhar</i> 23 ¹⁰ ₁₀ seers.
Kumaun ( " " )	.....	Weather fine until yesterday; heavy storm; crops above average; health fair; cattle-disease continues; prices slightly fallen.
Lucknow (" ")	Slight rain	Heavy dust-storm from east, with a few drops of rain, last evening; prevailing wind last few days east; sporadic cholera in city and district; a few cases of typhoid fever in cantonments.
Partabgarh (" 10th)	.....	Wind changed to the east; cholera less severe in Patti; small-pox generally throughout the district; prices fairly steady; <i>makua</i> and mango crop good.
Sitapur (" 11th)	Nil	Weather seasonable; <i>rabi</i> outturn poor; health good; wheat 23, barley 32; gram 25 seers.

Presidency or Province and District.	Rainfall for week preceding.	State of agricultural prospects.
N. W. Provinces and Oudh—contd.		
Aligarh (May 10th)	.....	Weather hot; indigo sowing progressing; slight fever reported in tahsil Secundra and Khair and fever and small-pox in Atrauli; wheat 21, barley 26, <i>bejhar</i> 25, gram 21 seers.
Cawnpore (" 11th)	4 in Cawnpore, with hail.	Extra crops fair; markets well stocked; health good; prices stationary; wheat 21, barley 27, <i>bajra</i> 26, <i>juar</i> 27 seers.
Moradabad (" ")	Nil	Prices steady; export of grain towards Agra continues; three deaths from cholera (sporadic) reported in tahsil Amroha, where small-pox also is reported to have appeared.
Fyzabad (" ")	3 on the night of 10th	Winds now easterly; prices firm; cholera unabated; cattle-disease in parts.
Saharanpur ( " " )	.....	Strong east wind blowing; reaping nearly over; threshing going on; wheat 26 to 28½, gram 22, barley 31½, rice 12½, <i>juar</i> 20½, <i>bajra</i> 19½, <i>urd</i> 23, <i>makki</i> 23½, <i>bejhar</i> 22 seers.
Farakhabad (" ")	2, with heavy hail-storm, on the evening of 10th.	Weather fair; wind now east; crops harvested and being garnered; prices—wheat 20½, barley 29½, gram 22½, <i>bajra</i> 20½, rice 13½, seers.
Rae Bareilly (" 10th)	Nil	Wind east; a good deal of labour employed on well-making; prices rising; wheat 19½, <i>mothi</i> 21, <i>dhan</i> 23, barley 24, <i>sudan</i> 24½, <i>arhar</i> 25½, <i>makki</i> 28½ seers. <i>General Remarks.</i> —Hot east winds till the evening of the 10th, when a storm passed over the provinces, which has cooled the air; hail in Cawnpore and Farakhabad; prices falling slightly in Farakhabad, Kumaun, and Saharanpur, elsewhere stationary or rising; cholera continues in eastern districts, but is less severe; a few cases continue to be reported in Moradabad and Meerut; small-pox decreasing in Allahabad, but continues in Partabgarh, and has appeared in Moradabad and Aligarh; cattle-disease continues in Kumaun.
Punjab—(May 10th)—		
Delhi	.....	Harvesting still in progress; slight rise in prices during the past week; health reports good.
Hissar	.....	Spring crops gathered; sowings for autumn crops thriving in canal villages; prices stationary; weather hot; health good.
Umballa	.....	Cutting of spring crops still in progress.
Jullundur	.....	Prices steady; threshing and winnowing in progress; crop about average.
Lahore	.....	A good crop; prices falling; health good.
Ferozepore	.....	Crops still being cut and threshed; prices steady.
Sialkot	.....	Spring crops cut; sugarcane and cotton promising; prices falling; health good.
Rawalpindi*	Slight rain	Reaping in progress; prices have a downward tendency; health generally good.
Peshawar	.....	Prospects good; further fall in prices.
Mooltan	.....	Crops garnered; further fall in prices; health good.
Dera Ismail Khan	.....	Reaping in progress; prices falling.
Central Provinces—		
Nagpur (May 11th)	.....	Very hot; ploughing for kharif commenced; health good; prices continue easy.
Jubbulpore ( " " )	.....	Hot; threshing and winnowing progressing; cholera reported; wheat 25 and rice 15 seers.
Saugor ( " " )	.....	Winnowing continues; cholera decreasing, few cases of small-pox; prices easy.
Seoni ( " " )	.....	<i>Rabi</i> winnowing almost completed; cattle-disease and small-pox continue; prices stationary.
Hoshangabad ( " " )	.....	Hot; few cases of small-pox; threshing continues; wheat 18 seers.
Raipur (" 7th)	.....	Hot; ploughing for <i>kharif</i> progressing; cattle-disease still reported; health good; rice 31 seers.
Sambalpur (" 5th)	.....	Hot; health good; rice 47 seers.
British Burma—		
(May 7th)—		
Akyab	2.15	Total rainfall 2.81; public health good; cattle-disease increasing in three townships.
Rangoon	.50	Total rainfall .56; a few fatal cases of small-pox, otherwise public health good.
Bassein	.33	Total rainfall .35; public health good; slight cattle-disease in three townships.
Prome	.63	Total rainfall 1.54; a few cases of cholera, otherwise public health good.
Amherst (Moulmein)	.57	Total rainfall 1.62; a few cases of cholera in Moulmein town, otherwise public health good.
Toungoo	.03	Total rainfall .32; public health good.
<i>General Remarks.</i> —Some scattered cases of cholera, in Pegu a little small-pox; public health otherwise good; cattle-disease increasing in Akyab, slight disease in two districts of Pegu; rain has fallen generally throughout provinces.		

* *Erratum.*—An error has been reported in the weather report received from Rawalpindi for the week ending the 10th April, Supplement to the Gazette of India of the 23rd idem, page 440. The rainfall should have been shown as two inches, and not as ten.

Presidency or Province and District.	Rainfall for week preceding.	State of agricultural prospects.
Assam—(May 11th)—		
Gauhati ...	2.44	Violent storm on 4th from 3 A.M. for nearly an hour, causing much damage; dysentery on the decline at Burpeta; agricultural operations of season progressing satisfactorily.
Sylhet ...	2.48	Weather seasonable; ploughing and sowing for <i>amun</i> progressing favourably.
Cachar ...	3.87	Weather cloudy; 9,049 deaths reported from cattle-disease to date; sowing of <i>asra</i> , <i>damahi</i> , and <i>murali</i> crops progressing; common rice 21 ⁵ / ₁₆ seers per rupee; health good.
Dibrugarh ...	1.56	Days warm; cattle-disease reported from several villages; ploughing for <i>sali</i> spring crops progressing; district healthy.
Mysore and Coorg—(May 11th)		
Bangalore ...	.....	{ Crops withering in parts of Kolar district for want of water, elsewhere crops in good condition and prospects favourable; fever and small-pox in parts, also murrain among cattle; prices generally stationary. Taisakh crop and coffee good.
Mysore ...	21	
Mercara ...	9	
Berar & Hyderabad—(May 11th)		
Amraoti ...	.....	Weather very hot; ploughing operations progressing; wheat 20 and <i>jowari</i> 34 seers.
Akola ...	.....	Ploughing for <i>kharif</i> sowing continues.
Hyderabad ...	.....	Water in tanks in some places insufficient for standing <i>tabi</i> crops; ground being prepared for <i>kharif</i> sowings; general health good; weather hot; prices—coarse rice 9 ⁵ / ₄ , wheat 14 ³ / ₄ , white <i>jowari</i> 21, yellow <i>jowari</i> 24, and horse gram 24 seers per current sicca rupee.
Central India States—(May 11th)		
Indore ...	.....	Heat suddenly increased; health good.
Morar (Gwalior) ...	.....	Weather seasonable; health good.
Satna ...	.....	Health good; wells dry; weather cloudy.
Ruthun ...	.....	Report not received.
Neemuch ...	.....	Small-pox has disappeared; weather hot.
Gooma ...	.....	Health and crops good.
Bhopal ...	.....	Weather clear and hot; small-pox of mild type prevalent in some parganas.
Agar ...	.....	Prospects continue favourable; health good.
Nowgong ...	Nil	Gathering of wheat crops nearly finished; two deaths from small-pox.
Mánpur ...	.....
Rajputana—		
Abu (May 11th) ...	.....	Unusually hot; high winds.
Sirohee (" 8th) ...	.....	Tanks dry, wells good; healthy; very hot.
Marwar (" 6th) ...	.....	Tanks all dry, water obtained with great difficulty from wells; health good; heat unbearable, hot winds blowing furiously, prices rising.
Meywar ( " " ) ...	.....	Tanks and wells fair; health good.
Harowtee (" 7th) ...	.....	Small-pox still prevalent at Kotah; wind variable; hot.
Jhallawar (" 5th) ...	.....	Nights and mornings cool; wind easterly.
Ajmere (" 11th) ...	.....	Excessive heat; cessation of wind; health fair.
Jeypore ...	.....	Report not received.
Bhuripore ...	.....	Report not received.
Ulwur (May 10th) ...	.....	Cattle-disease continues; health improving; strong hot winds.
Nepal (May 3rd)—		
Katmandu ...	Nil	Hot winds still prevailing; rain needed.

C. GRANT,
Offg. Secy. to the Govt. of India.

GOVERNMENT OF INDIA.
LEGISLATIVE DEPARTMENT.

ABSTRACT OF THE PROCEEDINGS OF THE COUNCIL OF THE GOVERNOR
GENERAL OF INDIA, ASSEMBLED FOR THE PURPOSE OF MAKING
LAWS AND REGULATIONS UNDER THE PROVISIONS OF THE
ACT OF PARLIAMENT 24 & 25 VIC., CAP. 87.

The Council met at Government House, Simla, on Wednesday, the 11th May,
1881.

PRESENT:

His Excellency the Viceroy and Governor General of India, K.G., G.M.S.I.,
G.M.I.E., *presiding*.
His Honour the Lieutenant-Governor of the Panjáb, K.C.S.I.
His Excellency the Commander-in-Chief, G.C.B.
The Hon'ble Whitley Stokes, C.S.I., C.I.E.
The Hon'ble Rivers Thompson, C.S.I., C.I.E.
The Hon'ble J. Gibbs, C.S.I., C.I.E.
Major the Hon'ble E. Baring, R.A., C.S.I.
Major-General the Hon'ble T. F. Wilson, C.B.
The Hon'ble C. Grant.

CENTRAL PROVINCES LAND-REVENUE BILL.

The Hon'ble MR. GRANT presented the Report of the Select Committee on the Bill to consolidate and amend the law relating to Land-revenue and the jurisdiction of Revenue-officers in the Central Provinces.

His Excellency THE PRESIDENT remarked that a paper which he now held in his hand had been sent to him some time ago; it was addressed to the Commissioner of the Nágpur Division by Gopal Narayan Ghatate and others, and embodied their views on the Bill. His Excellency wished to know if the various points to which they had drawn attention had been considered by the Committee.

The Hon'ble MR. GRANT replied that one important point at least had been under consideration,—that relating to the jurisdiction in the trial of cases relating to revenue-free grants—and the Committee had made certain recommendations on the subject.

Major the Hon'ble E. BARING :—"The Committee has also been able to meet the views of the memorialists to a certain limited extent in respect to the manner of appointing mukaddams."

His Excellency THE PRESIDENT presumed that he would find in the Committee's Report what had been done.

The Hon'ble MR. GRANT replied in the affirmative.

CENTRAL PROVINCES CESSSES BILL.

The Hon'ble MR. GRANT moved for leave to introduce a Bill to provide for the assessment of Provincial Cesses in the Central Provinces. He said that it was the practice in all settlements made in the Upper India Provinces to impose upon the payers of land-revenue certain local rates for the maintenance of schools, roads and district postal lines. As those rates were levied together with the land-revenue and calculated as a percentage upon the land-revenue, the provisions relating to them had been included as a matter of convenience in the Central Provinces Land-revenue Bill. It had, however, been represented to the Committee that it would be undesirable to include in the

same Bill provisions relating to the land-revenue which was fixed for the period of settlement, and cesses which were variable, at any rate within certain limits, for that period; and that such a combination might give colour to the impression that it was a breach of faith to vary those rates during the settlement. The Committee admitted the force of those representations and determined to keep the two subjects entirely distinct; and, accordingly, the provisions relating to Provincial cesses had been taken out of the Land-revenue Bill and would be incorporated in the separate short Bill which he now moved for leave to introduce.

The Motion was put and agreed to.

SUNDRY BILLS.

The Hon'ble MR. STOKES moved that the Hon'ble Mr. Evans be added to the Select Committees on the following Bills:—

To define and amend the law relating to Promissory Notes, Bills of Exchange and Cheques.

To define and amend the law relating to the Transfer of Property.

To define and amend the law relating to alluvion, islands and abandoned river-beds.

To consolidate and amend the law relating to the Courts of Small Causes established in the Presidency-towns.

To consolidate and amend the law relating to Criminal Procedure.

To amend the Indian Penal Code.

The Motion was put and agreed to.

The Council adjourned to Wednesday, the 25th May, 1881.

R. J. CROSTHWAITE,

SIMLA; } *Officiating Secretary to the Government of India,*
The 11th May, 1881. } Legislative Department.

NOTE.—The meeting which was originally fixed for Wednesday, the 4th May, 1881, was postponed to Wednesday, the 11th May, 1881.



SUPPLEMENT TO The Gazette of India.

No 21. } CALCUTTA, SATURDAY, MAY 21, 1881.

OFFICIAL PAPERS.

A SUPPLEMENT to the GAZETTE OF INDIA will be published from time to time, containing such Official Papers and information as the Government of India may deem to be of interest to the Public, and such as may usefully be made known.

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GOVERNMENT OF INDIA. PUBLIC WORKS DEPARTMENT. CIVIL WORKS. Irrigation.

REVENUE REPORT OF IRRIGATION WORKS IN BENGAL FOR 1879-80.

Nos. 167-80L, dated Simla, April 29, 1881.

RESOLUTION—By the Government of India, Public Works Department.

Read—

Letter No. 50761.-A. of 17th December 1880, from the Government of Bengal, in the Public Works Department, and its enclosures, namely, the Revenue Report of irrigation works in Bengal for the year 1879-80, and a Resolution of His Honor the Lieutenant-Governor reviewing the report.

OBSERVATIONS.—The total capital, including indirect charges, invested in irrigation works in Bengal up to the end of 1879-80, was Rs. 5,26,72,240, as follows:—

	Rs.
Productive Public Works	5,12,00,048
Imperial Ordinary „	9,25,212
Provincial Works	5,46,980
TOTAL	5,26,72,240

The total charges for interest during the year amounted to Rs. 22,00,361, of which Rs. 22,04,767, being the interest on the Productive Public Works capital, is payable from the Provincial to the Imperial Treasury. In the Resolution of the Government of India on the last Bengal Revenue Report, it was noticed that the Government of Bengal had included the interest on Imperial ordinary works in the amount to be paid to the Imperial Treasury. This year the amount is correctly stated.

2. The total expenditure under all heads of the Irrigation Department during the year was Rs. 40,74,471. The amount is incorrectly stated in paragraph 10 of the Chief Engineer's note. The tuccavee outlay should be Rs. 1,11,893, instead of Rs. 1,12,893.

3. Against the charges for interest of the year on Productive Public Works amounting to Rs. 22,04,767, the total net revenue is only Rs. 1,28,052. This net revenue gives a return of 0.25 per cent. on the capital invested in Productive Public Works as given above. There is thus a deficit of Rs. 21,32,309 on the operations of the year.

4. The accumulated debt of the Irrigation Productive Public Works of Bengal for unpaid working expenses, indirect charges, and interest, is Rs. 1,74,88,744. This debt is increasing yearly. But it increases in a decreasing ratio, the working expenses showing a steady and satisfactory diminution of their proportion to the total revenue, thus:—

1875-76	Working expenses were	241.06	per cent.	of total revenue.
1876-77	"	190.15	"	"
1877-78	"	149.43	"	"
1878-79	"	99.88	"	"
1879-80	"	83.89	"	"

and although the working expenses are still very high, it is satisfactory to notice that the improvement in the financial prospects of the Bengal canals, which was noticed in the Resolution of the Government of India on the Revenue Report for 1878-79, still continues. The difference between the revenue and working expenses, including indirect charges, exceeds that of the previous year by nearly 1½ lakhs of rupees in favor of the revenue.

5. The total revenue collected during the year amounted to Rs. 11,03,781 as compared with Rs. 8,51,118 of the previous year. Of this, the following amounts were realised from navigation:—

	Rs.
Orissa canals	98,075
Midnapore "	1,05,518
Tidal "	44,918
Sone "	39,859
TOTAL	2,88,370

This amount is Rs. 64,933 in excess of that of the previous year.

6. The areas irrigated during the year compared with those of the previous year were—

	1878-79.	1879-80.
	Acres.	Acres.
Orissa canals	111,250	109,038
Midnapore "	58,731	100,178
Sone "	197,018	180,556
TOTAL	366,999	339,772

The seasons, except in Midnapore, were not favorable to the extension of canal irrigation. The rainfall in Orissa was normal, and that on the Sone canals excessive. The rainfall in Midnapore was far below the average. This partially accounts for the large and sudden increase in the irrigated area in this district. The following areas were irrigated during the last ten years by the Midnapore canal:—

	Acres.
1870-71	22,671
1871-72	6,028
1872-73	14,130
1873-74	36,349
1874-75	72,318
1875-76	55,995
1876-77	32,681
1877-78	19,819
1878-79	58,731
1879-80	100,178

The largest area previous to the year under review was obtained in the dry year 1874, but the irrigation in the three following years fell off very rapidly. No similar reduction, if any, from the area irrigated in 1879-80 can occur for some years, as 94,817 acres out of the 100,178 irrigated have been leased for five years.

7. The area irrigated by the Orissa canals, in spite of the plentiful rainfall, was but little less than that of the previous year. It would have been much larger were it not for the want of additional distributaries, drainage and protective works. Estimates for these will be shortly submitted. The fluctuations which have occurred in the areas irrigated yearly by these canals have now probably ceased; for out of the total of 109,038 acres irrigated in 1879-80, no less than 105,186 acres have been leased for three years.

8. It is noticed that in this year's report of Orissa irrigation no unauthorised irrigation has been assessed or entered in the report, as was the case last year, although the Revenue Officer states that there was a good deal of illicit irrigation, which, had it been entered, would have increased the area "far beyond that of any previous year." It would be desirable in future reports to give the area of illicit irrigation separately, if possible.

9. Considerable waste of water probably results from the want of field channels in a great portion of the irrigated area in Midnapore and Orissa. It would be instructive to compare the "duty" of water in the areas provided and those not provided with these channels. Considerable progress was made during the year in the construction of field channels in the Sone canals, where they are much more important than in Orissa or Midnapore owing to the much larger proportion of the dry crops; 172 miles of channels were completed, or in progress, under the supervision of the Canal Officers, but at the expense of the people. In future reports the total length completed up to date should be given.

10. The calculations given in the report by the Superintending Engineer, with reference to the irrigating capacities of the Sone canals, show the necessity of economising the supply, and point to the desirability of ascertaining the quantity of water actually required to irrigate a given area. It is satisfactory to notice that a commencement has been made in Bengal in recording observations on the water issued.

11. The high cost of maintenance of the canals in Bengal is largely due to charges for silt clearance. It is noticed that experiments have been commenced to determine the possibility of excluding a portion, at any rate, of the silt entering the canals.

12. The Lieutenant-Governor has drawn the attention of the Collectors to the large uncollected balances on the Sone canals. These balances seem to be mainly due to short collections during the last two years:—

	Rs.
The balance at commencement of 1878-79 was	81,341
at end of 1878-79	3,04,411
at end of 1879-80	3,18,378

13. A turbine was being fixed at the end of the year for working a sugar-mill on the Arrah canal. Some small flour mills also were fixed. This is the beginning of what should be a great industry from water-power in Behar.

14. Statements similar to those appended to this Resolution, showing the general financial results of the works, based on the assessments as well as the collections during the year, should be submitted with future Revenue Reports.

ORDER.—Ordered, that copies of this Resolution and of the Report and its accompaniments be forwarded to the Secretary of State, and to the Finance and Commerce and the Home, Revenue and Agricultural Departments for information.

Also, that a copy of this Resolution be forwarded to the Government of Bengal for information and guidance.

Also, that copies of this Resolution and of the Report be forwarded to the

The Governments of Madras, Bombay, the North-Western Provinces and Oudh, and the Punjab.
The Chief Commissioners, Central Provinces and British Burma.
The Resident at Hyderabad.
The Agents to the Governor General for Central India and Rajputana.

Local Governments and Administrations noted in the margin, in the Public Works Department, Irrigation Branch, for information.

Also to the Foreign Department for communication to the Chief Commissioner of Mysore.

Also, that this Resolution, the Resolution of the Bengal Government, and the Chief Engineer's Report, with a few selected statements, be published in the Supplement to the *Gazette of India*.

J. CROFTON, *Major-Genl., R.E.*,

Depty. Secy. to the Govt. of India.

Extract from the Proceedings of the Lieutenant-Governor of Bengal, in the Public Works Department, Irrigation Branch,—No. 49841.-A., under date the 13th December 1880.

Read—

The Canal Revenue Reports for the year 1879-80 and note by the Chief Engineer on the same.

The capital outlay on irrigation works during the year under review was Rs. 18,48,281, and the total outlay under this head amounted to Rs. 5,11,61,194, of which Rs. 4,98,01,887 have been expended on productive works; the balance, Rs. 13,59,307, is the expenditure on works other than productive, but for which capital and revenue accounts are kept, divided into "Ordinary," charged to Imperial Funds Rs. 8,31,624, and "Ordinary," charged to Provincial Funds Rs. 5,27,683.

The amount of interest for 1879-80 payable by the Government of Bengal to the Imperial Treasury is Rs. 22,04,767.

The receipts of the year amounted to Rs. 10,94,112, against Rs. 8,51,133 in 1878-79, and Rs. 4,94,772 in 1877-78.

The following statement shows the receipts from all sources for each project, as compared with those of the two previous years :—

	Receipts, 1879-80.	Receipts, 1878-79.	Receipts, 1877-78.
	Rs.	Rs.	Rs.
<i>Orissa Project—</i>			
Water-rates	1,57,747	1,16,416	1,17,818
Navigation	98,075	57,042	33,844
Miscellaneous	13,696	8,546	9,445
TOTAL	2,69,518	1,82,004	1,61,107
<i>Midnapore Canal—</i>			
Water-rates	1,30,140	85,014	53,488
Navigation	1,05,518	77,340	1,06,917
Miscellaneous	11,567	8,356	9,698
TOTAL	2,47,225	1,70,710	1,70,093
<i>Hidpellee Canal—</i>			
Navigation	44,918	59,723	60,971
Miscellaneous	863	1,070	1,309
TOTAL	45,781	60,793	62,280
<i>Sone Project—</i>			
Water-rates	4,44,716	3,73,312	59,651
Navigation	39,959	29,332	26,774
Miscellaneous	47,013	31,982	14,867
TOTAL	5,31,588	4,37,626	1,01,292
GRAND TOTAL	10,94,112	8,51,133	4,94,772

The above figures show a very satisfactory increase in the revenue; the outstanding balances on account of water-rates are however, the Lieutenant-Governor observes, still very heavy, as follow :—

	Rs.
Orissa	58,928
Midnapore	48,984
Sone	3,18,378
TOTAL	4,26,290

In Orissa and Midnapore the demands fall due early in February, but little time is therefore available for the collection of the revenue before the close of the year. On the Sone canals the arrears are due to large uncollected balances of former years. On this subject the Chief Engineer, in paragraph 84 of his note, writes :—“The Commissioner of Patna states that there is no real unwillingness on the part of the people to pay for the water which they have taken, 95½ per cent. of the current demand having been realized. He attributes the failure in collecting the balances to errors in distribution of water, measurements, and assessments during the first years the canals were opened. These faults have to a great extent, he says, been remedied, but difficulty is still experienced in collecting the arrears due on account of those years. A change in the system of collections has been made, from which good results are hoped for.” The Lieutenant-Governor trusts that every effort will be made by the Collectors to realize the large outstanding arrears on the Sone canals.

The working expenses amounted to Rs. 9,20,498, against Rs. 8,05,610 in 1878-79 and Rs. 7,02,857 in 1877-78. The increase is entirely on the Orissa works, owing chiefly to extensive repairs to the Mahanuddy and Naraje weirs, rendered necessary by the injury done during the excessive floods of August 1879. Both in Midnapore and on the Sone canals the cost of maintenance was less than in the previous year.

The areas assessed for water-rates, compared with those of previous years, are as follow :—

		1877-78. Acres.	1878-79. Acres.	1879-80. Acres.
Orissa	{ Kharif . . .	95,088	105,500	105,186
	{ Rabi . . .	3,071	5,517	3,616
	{ Perennial . .	336	233	236
	TOTAL	98,495	111,250	109,038
Midnapore	{ Kharif . . .	19,550	58,607	100,054
	{ Rabi . . .	269	124	124
	TOTAL	19,819	58,731	100,178
Sone	{ Kharif . . .	107,087	99,964	41,182
	{ Rabi . . .	124,812	77,430	62,266
	{ Perennial . .	9,891	19,624	27,158
	TOTAL	241,790	197,018	130,556
GRAND TOTAL		360,104	366,999	39,772

In Orissa the decrease is more apparent than real. “The figures in the current year,” as remarked by the Chief Engineer, “represent the area actually leased, while those for 1878-79 included many acres of unleased land on which water-rates could not be realized. There has been in fact a real advance, and the kharif irrigation has been placed on a better footing. On this subject the Commissioner says :—‘It is a positive source of satisfaction to find that most of the area assessed in 1878-79, as having been irrigated surreptitiously, is included in the acreage under lease shown against the year under review—a result which clearly indicates that the value of canal water, as one of the auxiliaries of production, is really appreciated.’ The increase in the leased area is stated by the Collector to have been 10,050 acres.”

The advance of irrigation in Midnapore, and its effect on the country, is so important that no apology is needed for quoting largely from the Chief Engineer's note. In paragraph 50 he says:—"The great increase in the irrigated area must no doubt be ascribed chiefly to the deficient rainfall of the year, which amounted to only 38.11 inches at Midnapore and 36.02 inches at Panchkoora, against an average of the last ten years of 53.18 and 52.64 respectively. In the first half of the kharif season, the rainfall was particularly scant. All the demands for canal water were satisfactorily met, and the canal is thoroughly popular. On this point the Deputy Revenue Superintendent states in paragraph 4 of his report:—"People living outside the irrigable area now envy the position of those who reside within it, and instances of emigration, though still few in number, from the unirrigable to the irrigable area, purely on account of the benefits to be derived from the canal, may be cited. It is now an undisputed fact that, while the Government irrigators are paying off their debts, and rapidly extricating themselves from the mahajuns' clutches, the cultivators who are beyond reach of the Government canal are getting more and more hopelessly involved in debt, both in paddy and hard cash." Again, in paragraph 15,—"I should, besides, in this place notice an unmistakeable proof of their appreciation of the canal by the land-holding class of Midnapore during the last-mentioned year. Pergunnahs Dhakiabazar and Bhunjbhoom belong to the Midnapore zemindary; the former is within reach of the Government canal while the latter is not. Both these pergunnahs were offered to be let out in *putnee* during the year 1879-80, but while Dhakiabazar was greedily sought after by hundreds of people, and sold by the zemindar on the most advantageous terms, very few were willing to take a *putnee* in Bhunjbhoom, simply because canal irrigation was not there available. I may further add that within the irrigable area, the sale of *jotedaree* right was hitherto unknown, but such sales are now frequent, and they fetch very fair prices to the vendors. The area of uncultivated land, also, within the irrigable area is being gradually diminished." The Collector of Midnapore remarks on this subject:—"The canal is in high favor with the people of the irrigated area from Midnapore to Panchkoora, and applications for extension of some of the existing channels, and for the construction of new ones, are frequently received in my office." The Commissioner also reports that:—"The present state and prospects of irrigation in Midnapore could not well be better, inasmuch as the greater part of the irrigable area has been leased. It is essential, if this satisfactory state of affairs is to be maintained, that the canal be kept in thorough repair and the distributaries extended." It was with this object in view, and to enable us to meet our engagements, as regards water-supply, that the canal was widened this year."

The great advantages of irrigation in a year of scant rainfall, such as that under review, are further shown by the experiments on the comparative yield of the irrigated and unirrigated rice crop, the difference in favor of irrigation being represented by no less than 20 maunds of paddy per acre.

The rainfall in Behar was excessive, as shown in the 74th and 75th paragraphs of the Chief Engineer's note, and fully accounts for the great falling-off in the areas irrigated under both *kharif* and *rabi*. It is satisfactory to observe that the spread of sugarcane cultivation, noted in last year's report, still continues, the area having increased from 19,624 to 27,158 acres. On this subject the Commissioner of Patna remarks:—"In illustration of the prosperity of the agricultural classes in Shahabad, I would note that the cane cultivators in the district have, with a view to introduce an improved method for the manufacture of molasses, bought 9,000 of the Behea mills, patented by Messrs. Thomson, Mylne & Co. at an outlay of Rs. 6,30,000. This is the result of the impetus which the canal irrigation has given to the cultivation of sugarcane. Before the opening of the canals, the area under cane cultivation was only 1,804 acres,

* Note.—27,158 acres were actually irrigated in 1879-80. whereas it has now increased to 22,000* acres, or nearly 12 times the area previously cultivated. This increased cultivation of sugarcane has added considerably to the agricultural wealth of the district, the increase of profit derived from this source being estimated at no less than Rs. 4,73,000 per annum."

The total revenue derived from navigation amounts to Rs. 2,88,370, against Rs. 2,23,437 last year, the increase is mostly caused by the earnings of the Government transport service having, for the first time, been introduced into the accounts. The following statement shows the *tollage* collections for the last eight years :—

YEAR.	TOLL COLLECTIONS.				
	Orissa.	Midnapore.	Hidgellee.	Sone.	TOTAL.
	Rs.	Rs.	Rs.	Rs.	Rs.
1872-73	10,044	20,994	14,454	...	45,492
1873-74	18,577	34,104	27,978	...	80,659
1874-75	21,412	44,886	52,209	...	1,18,507
1875-76	16,877	51,810	22,540	...	90,727
1876-77	22,881	67,651	44,572	4,852	1,39,956
1877-78	33,841	1,06,917	60,971	26,774	2,28,506
1878-79	57,042	77,340	59,728	29,332	2,23,437
1879-80	62,389	91,861	44,918	27,904	2,26,772

The falling-off in the tollage receipts of the Hidgellee canal is due to the closure for silt clearance. Putting aside the exceptionally large traffic on the Midnapore canal in 1877-78, caused by the demand for food grains at the time of the Madras famine, the statement shows a satisfactory and steady increase in the traffic.

The results of the irrigation operations of the year, as stated in the 102nd paragraph of the Chief Engineer's note, cannot be considered otherwise than satisfactory. "As shown in the report for the year 1878-79, the receipts from the canals in that year exceeded the working expenses by Rs. 45,523. In the current year the excess is Rs. 1,73,614, and had it not been that unusually high floods in Orissa caused much damage to the weirs and thus entailed heavy expenditure on repairs, there is no doubt the estimated profit, Rs. 3,23,000, would have been realized. Calculating by the earnings of the canals, the surplus on the year's operations would be Rs. 2,26,145, as follows :—

	Rs.
"Orissa canals	—92,700
"Midnapore "	1,16,582
"Hidgellee "	3,497
"Sone "	1,98,775
TOTAL	2,26,145"

The Lieutenant-Governor recognizes the excellent work done by Mr. Wylly and Mr. Roberts, Deputy Revenue Superintendents of Canals in Orissa. He also fully appreciates the services of Baboo Jodonath Mookerjee, Deputy Revenue Superintendent in Midnapore, which are prominently brought to notice in the reports of the Collector of Midnapore and the Commissioner of Burdwan, by whom he is highly commended for his zeal and energy, and for his successful administration under circumstances of no ordinary difficulty caused by the sudden and great spread of irrigation. Sir Ashley Eden also fully endorses the remarks of the Chief Engineer on the officers mentioned in the 105th paragraph of his note, viz., Messrs. Rhind and Vertannes, and Major Heywood, Superintending Engineers; Mr. Hayes, Assistant Engineer, Cossye Division; also the officers mentioned by the Superintending Engineer, Sone Circle.

By order of the Lieutenant-Governor of Bengal,

H. C. LEVINGE,

Joint-Secy. to the Govt. of Bengal,
P. W. Dept., Irrigu. Branch.

REVENUE REPORT.

Note on the Canal Revenue Reports for the year 1879-80 by H. O. LEVINGE, Esq., C.E., Chief Engineer, Bengal, Irrigation Branch.

The capital outlay (direct charges) on irrigation works in Bengal during 1879-80 was Rs. 18,48,281
In the five previous years the capital outlay (direct charges) was as follows:—

	Rs.
1874-75	49,85,345
1875-76	41,97,442
1876-77	33,92,789
1877-78	24,08,969
1878-79	28,32,279

2. The total capital (direct charges) invested up to the end of the year amounted to Rs. 5,11,62,718, viz. :—

	Rs.
Productive Public Works	4,98,01,887*
Ordinary works for which capital and revenue accounts are kept, and of which the cost has been charged to Imperial Funds	8,31,624*
Ordinary works for which capital and revenue accounts are kept, and of which the cost has been charged to Provincial Funds	5,27,683*
TOTAL	5,11,61,194

3. The items composing the outlay are as follow :—

PROJECTS.	OUTLAY	
	During the year.	To the end of the year.
	Rs.	Rs.
CAPITAL OUTLAY (DIRECT CHARGES).		
PRODUCTIVE PUBLIC WORKS.		
Orissa canals	4,67,756	1,87,75,929
Midnapore canal	1,60,532	74,90,473
Hidgellee Tidal canal . . . . .	...	17,72,699
Sone canals	9,85,789	2,17,62,786
TOTAL	16,14,077	4,98,01,887
IRRIGATION AND NAVIGATION WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.		
IMPERIAL.		
Tirhoot project (in abeyance) . . . . .	...	5,31,425
Hooghly ditto . . . . .	...	1,42,426
Damoodur project (suspended)	—1,729	1,57,773
TOTAL	—1,729	8,31,624
PROVINCIAL.		
Joojooty project	489	42,581
Sarun ditto	2,48,951	4,85,102
Plantations on Orissa and Sone canals	—13,507	...
TOTAL	2,35,933	5,27,683
GRAND TOTAL	18,48,281	5,11,61,194

* These figures do not agree with those given in the last year's report, which included the capitalized value of abatement of land revenue. The latter is now shown separately under "Indirect charges."

4. The indirect charges, other than interest, *viz.*, (1) capitalisation of land revenue abated; (2) loss by exchange on payments in England; and (3) charges for leave and pension allowances, debitable to the capital account of the several projects, amount for the year to Rs. 2,08,418, and up to the end of the year to Rs. 15,13,946, as detailed below :—

PROJECTS.	INDIRECT CHARGES	
	During the year.	To the end of the year.
PRODUCTIVE PUBLIC WORKS.		
Orissa canals	Rs. 16,183	Rs. 4,32,068
Midnapore canal	13,844	1,69,046
Hidgellee Tidal canal . . . . .	...	44,803
Scene canals	65,657	7,55,141
TOTAL .	95,684	14,01,061
IRRIGATION AND NAVIGATION WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.		
IMPERIAL.		
Tirhoot project	74,650	74,650
Hooghly do.	2,665	2,816
Damoodur do.	16,122	16,122
TOTAL .	93,437	93,588
PROVINCIAL.		
Joojooty project	1,731	1,731
Sarun do.	17,566	17,566
TOTAL .	19,297	19,297
GRAND TOTAL .	2,08,418	15,13,946

5. The following table shows the total receipts, working expenses, and charges for interest in respect of Productive Public Works for the year 1879-80, as compared with the five previous years :—

	1879-80.	1878-79.	1877-78.	1876-77.	1875-76.	1874-75.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Receipts from all sources	10,04,112	8,51,183	4,04,772	3,29,760	2,30,434	2,17,593
Working expenses (direct charges)	9,20,498	8,05,610	7,02,857	5,97,960	5,29,490	3,61,388
Net revenue	1,73,614	45,523	2,08,085	2,68,200	2,99,056	1,43,795
Charges for interest	22,04,767	21,20,416	20,03,270	18,78,189	17,14,578	15,29,946
DEFICIT .	20,31,153	20,74,893	22,11,355	21,46,389	20,13,634	16,73,741
Indirect charges debitable to revenue	53,966	44,529	36,506	29,089	26,006	18,498
TOTAL DEFICIT .	20,85,119	21,19,422	22,47,861	21,75,478	20,39,640	16,92,239

6. The total charges for interest for 1879-80 amounted to Rs. 22,60,361, *viz.* :—

Productive Public Works	Rs. 22,04,767
Irrigation and navigation works for which capital and revenue accounts are kept—	
(1) Imperial	37,461
(2) Provincial	18,133
TOTAL .	22,60,361

7. The amount of interest for 1879-80 payable by the local Government to the Imperial Treasury is Rs. 22,04,767, viz., the interest on the capital outlay (direct charges) on Productive Public Works.

8. The total accumulated debt on account of interest and unpaid working expenses amounted to Rs. 1,74,75,636 as shown below :—

PRODUCTIVE PUBLIC WORKS.		Rs.
Unpaid working expenses (direct charges)		13,53,993
Interest		1,58,78,020
TOTAL		1,72,27,013
Irrigation and navigation for which capital and revenue accounts are kept—		
1.—IMPERIAL.		
Unpaid working expenses		2,25,366
Interest		2,25,366
TOTAL		2,25,366
2.—PROVINCIAL.		
Unpaid working expenses		23,257
Interest		23,257
TOTAL		1,74,75,636

9. Inclusive of indirect charges debitable to revenue, the total debit up to the end of the year amounted to Rs. 1,77,53,708, viz. :—

	Rs.
Productive Public Works	1,75,05,085
Irrigation and navigation for which capital and revenue accounts are kept—	
Imperial	2,25,366
Provincial	23,257
TOTAL	1,77,53,708

10. The total expenditure by the Irrigation Branch during the year 1879-80 was Rs. 40,75,471, inclusive of English expenditure amounting to Rs. 33,549. The funds from which this expenditure was met, and the various heads of account to which it was charged, are detailed below :—

IMPERIAL.		Rs.
Productive Public Works		16,14,077
Irrigation and navigation works for which capital and revenue accounts are kept		—1,729
Agricultural works for which neither capital nor revenue accounts are kept		4,63,789
TOTAL		20,76,137
PROVINCIAL.		
Productive Public Works (revenue account)		9,20,498
Irrigation and navigation works for which capital and revenue accounts are kept		2,35,933
Irrigation and navigation works for which neither capital nor revenue accounts are kept		6,10,801
Agricultural works for which neither capital nor revenue accounts are kept		93,976
TOTAL		18,61,208
Taccavi outlay		1,12,893
Contributions		22,325
Local		2,908
TOTAL		40,75,471

11. In addition to the above outlay, the Irrigation Branch spent from the budget grants of the general branch of the Department Rs. 3,80,839 on roads, buildings and other works.

12. The following table shows the areas irrigated and assessed in the three circles, as compared with those of the three previous years.

	1879-80.				1878-79.				1877-78.				1876-77.			
	Kharif.	Rabi.	Perennial.	TOTAL.	Kharif.	Rabi.	Perennial.	TOTAL.	Kharif.	Rabi.	Perennial.	TOTAL.	Kharif.	Rabi.	Perennial.	TOTAL.
Oriassa canals	105,186	3,616	236	108,038	105,500	5,517	233	111,250	95,068	3,071	336	98,475	26,070	3,001	321	30,392
Mahapure canal	100,178	...	...	100,178	58,697	124	...	58,821	19,550	...	269	19,819	32,600	81	...	32,681
Some canals	41,132	62,266	27,158	130,556	99,964	77,430	19,634	197,028	107,087	124,812	9,891	241,790	1,923	32,017	1,879	35,819
TOTAL	246,496	65,882	27,394	339,772	264,071	183,071	19,857	466,999	221,725	127,883	10,496	360,104	60,593	36,086	2,200	98,885

ORISSA CANALS.

13. The capital interest and revenue accounts of these canals are given below :—

1.—CAPITAL ACCOUNT.

PARTICULARS.	MAHANUDDY SERIES.		BRAHMINEE AND BYTURNEE SERIES.		TOTAL.	
	Outlay during 1879-80.	Outlay to end of 1879-80.	Outlay during 1879-80.	Outlay to end of 1879-80.	Outlay during 1879-80.	Outlay to end of 1879-80.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
DIRECT CHARGES.						
Works	3,03,176	1,03,89,216	1,05,144	28,18,511	4,08,320	1,31,87,431
Establishment.	59,316	29,15,688	42,619	7,03,827	1,01,935	36,19,515
Tools and plant	49,142	16,31,767	—1,028	57,746	48,114	16,89,513
Suspense balances	—86,747	3,36,709	...	...	—86,747	3,36,709
TOTAL	3,24,887	1,52,53,085	1,46,735	35,80,083	4,71,622	1,88,33,168
Deduct receipts on capital account	3,850	46,177	16	11,062	3,866	57,239
NET OUTLAY	3,21,037	1,52,06,908	1,46,719	35,69,021	4,67,756	1,87,75,929
INDIRECT CHARGES.						
Capitalization of abatement of land revenue . . . . .					...	30,373
Loss by exchange . . . . .					...	...
Leave and pension allowances					16,183	4,01,695
TOTAL INDIRECT CHARGES					16,183	4,32,068

2.—INTEREST ACCOUNT.

	Mahanuddy series.	Brahminnee and Byturnee series.	TOTAL.
	Rs.	Rs.	Rs.
Interest charges to end of 1878-79	53,30,094	6,93,218	60,23,312
Ditto for 1879-80	6,77,092	1,57,300	8,34,392
Total interest charges to end of 1879-80	60,07,186	8,50,518	68,57,704

3.—REVENUE ACCOUNT—(ACTUALS).

	EXPENDITURE			RECEIPTS	
	During the year.	To end of the year.		During the year.	To end of the year.
	Rs.	Rs.		Rs.	Rs.
Works (extensions and improvements).	293	1,644	Water-rates	1,57,747	5,49,052
Repairs and maintenance	2,58,450	13,91,524	Navigation	98,075	3,11,557
Establishment	98,865	6,77,845	Miscellaneous	13,696	1,09,237
Tools and plant	8,389	75,125			
Profit and loss . . . . .	...	640			
Refunds of revenue	512	1,176			
TOTAL EXPENDITURE	3,66,514	21,47,954	TOTAL RECEIPTS	2,69,518	9,69,846
			DEFICIT	96,996	11,78,108

14. The total debt on account of interest and unpaid working expenses amounted for the year to Rs. 9,31,388, and to the end of the year to Rs. 80,35,812.

15. The expenditure on, and earnings of, the canals are given in the following statement:—

EXPENDITURE.		EARNINGS.	
	Rs.		Rs.
Works (extensions and improvements)	298	Water-rates	1,62,034
Repairs and maintenance	2,58,450	Navigation	98,075
Establishment	98,865	Miscellaneous	13,696
Tools and plant	8,349		
Refunds of revenue	512		
		TOTAL EARNINGS	2,73,806
TOTAL EXPENDITURE	3,66,514	DEFICIT	92,709

16. The following table shows the areas irrigated and the rainfall in each of the years commencing from 1872-73:—

YEAR.	Kharif.	Rabi.	Perennial.	TOTAL.	Rainfall.
	Acres.	Acres.	Acres.	Acres.	Acres.
1872-73	8,799	941	18	4,753	73-00
1873-74	9,104	3,291	176	12,571	40-31
1874-75	19,740	2,454	267	22,459	64-00*
1875-76	13,991	4,102	314	18,409	70-00*
1876-77	26,069	3,991	321	30,382	44-26*
1877-78	95,088	3,071	336	98,495	47-94*
1878-79	105,500	5,517	233	111,250	61-98*
1879-80	105,186	3,616	236	109,038	60-85*

* These are the mean of observations at Cuttack and Marsaghai.

17. There was therefore a decrease of 1,898 acres in rabi, and of 314 acres in kharif—total 2,212 acres. In explanation of this decrease the Deputy Revenue Superintendent states:—

"The survey operations had, I think, something to do with the decrease in rabi. The cultivators imagined that the survey might be for land settlement purposes, and therefore refrained from double-cropping their holdings."

But he considers the closure of the canal in May for silt clearance to have been the chief cause. As regards kharif, the figures for the current year represent the area actually leased, while those for 1878-79 included many acres of unleased land on which water-rates could not be realised. There has, in fact, been a real advance, and the kharif irrigation has been placed on a better footing. On this subject the Commissioner says:—

"It is a further source of satisfaction to find that most of the area assessed in 1878-79 as having been irrigated surreptitiously, is included in the acreage under lease shown against the year under review—a result which clearly indicates that the value of canal water, as one of the auxiliaries of production, is really appreciated."

The increase in the leased area during the year is stated by the Collector to have been 10,050 acres.

18. The year opened with an outstanding balance of Rs. 80,273, of which Rs. 78,717 was on account of water-rates, and Rs. 1,556 on account of miscellaneous canal revenue. The assessments falling due during 1879-80 amounted, on account of water-rates and miscellaneous revenue, to Rs. 1,62,034 and Rs. 9,740, against Rs. 1,69,730 and Rs. 6,385 respectively last year.

19. The total for recovery during the year was therefore—

	Water-rates. Rs.	Miscellaneous. Rs.	TOTAL. Rs.
Of the above—	2,40,751	11,296	2,52,047
The realizations in cash were .	1,57,747	10,433	1,68,180
Remitted or written-off .	24,076	814	24,890
Balance at the end of the year	58,928	49	58,977

20. Of the balance of Rs. 58,977 outstanding at the end of the year, the Revenue Superintendent reports that Rs. 30,000 have been collected since its close, and that there will be no difficulty in realising the remainder.

21. The remissions on account of non-supply of canal water, and for damage by deficient or too great supply, amounted to Rs. 3,529. The difference of Rs. 21,361 was on account of the assessments of 1878-79 for lands irrigated without lease, which had to be abandoned or compromised.

22. The Deputy Revenue Superintendent thus summarises the irrigation operations of the year in Orissa: "(1) That nearly half a lakh of rupees was realised in excess of the collections of the previous year; (2) that though the remissions were heavy, they were chiefly made for causes beyond power of control of this Department; (3) that more than 50 per cent. of the outstanding balance has been realised within the third month of the current year; (4) that the kharif irrigation returns for 1879-80 contain nothing but what has been actually leased for, that these areas are under lease until November 1882, and will be augmented as cadastral survey assessments are made; and (5) that all disturbing elements, such as unleased areas and unauthorised irrigation assessments, have been absorbed into leases and eliminated from the accounts."

23. The rainfall of the year at Cuttack was 62.63 inches, against 52.32 inches in 1878-79, and an average of 55.07 for the last 22 years; but the average fall at 13 different stations in the district, from the 1st June to 31st October (the kharif season), was 45.09 inches against 48.08 inches, the average of 22 years. There was nothing unusual in the season.

24. The cost of collections of revenue on the canals for the year amounted to 13.12 per cent. on the demand, and to 19.66 per cent. on recoveries against 13.76 per cent. and 23.15 per cent. in the previous year. This is an improvement, but the charges are still high, and with a view to their further reduction it is in contemplation, owing to the introduction of the cadastral maps and long-lease system having greatly facilitated superintendence, to dispense with one of the Deputy Revenue Superintendents, and to place the whole revenue establishment under the control of Mr. Wylly, an officer whose long experience and well-known ability especially fits him for the work. No reduction can be made in the petty establishments, which are now at their minimum working strength.

25. Attention is again drawn by Mr. Wylly to the importance of drainage. He brings to notice that in the case of the irrigated areas under the Kendrapara and Patamundi canals, which are badly drained and sufficiently supplied with distribution channels, much greater difficulty is experienced in collecting revenue than in that of the Taldundah and Machgong canals, where the drainage system is more complete. This question is receiving attention, and provision will be made in the revised estimates of the project for the complete drainage of the whole area commanded by the distributaries.

26. The percentage of lift to flow irrigation was nowhere more than 4 per cent. in kharif, while in rabi it varied from 30 to 83 per cent. The latter large percentage is accounted for by the fact that the high lands, usually selected for the rabi crops, are not always commanded by direct flow.

27. The cadastral maps have been found of great use in assessing the irrigated areas. The whole of these maps, 2,022 in number, have now been received from the Surveyor-General. The lithographing is being pushed on rapidly, and will probably be completed by the end of the current official year.

28. In the 9th and following paragraphs of his report the Superintending Engineer gives tables showing the lengths of canals open at the close of the year, with the areas commanded and irrigated. No extension of the main canals for irrigation purposes has taken place during the year; but 10½ miles of village channels were completed on the Kendrapara Canal, and 7½ miles of new channel were constructed in connection with Range I of the High Level Canal.

29. The following statement, copied from paragraph 12 of the Deputy Revenue Superintendent's report, compares the assessed with the irrigable areas on each of the canals for the past two years:—

YEAR.	KENDRAPARA.			PATTAMUNDI.			TALDUNDAR.			MACHGONG.			HIGH LEVEL (CUTTACK).			HIGH LEVEL (BALASORE).		
	Rabi.	Kharif.	TOTAL.	Rabi.	Kharif.	TOTAL.	Rabi.	Kharif.	TOTAL.	Rabi.	Kharif.	TOTAL.	Rabi.	Kharif.	TOTAL.	Rabi.	Kharif.	TOTAL.
1878-79	Acres. 3,545	Acres. 43,050	Acres. 46,595	Acres. 657	Acres. 13,830	Acres. 14,487	Acres. 402	Acres. 9,832	Acres. 10,234	Acres. 658	Acres. 25,140	Acres. 25,804	Acres. 428	Acres. 13,642	Acres. 14,070	...	...	...
1879-80	2,624	43,021	45,645	206	11,790	11,996	325	10,073	10,398	430	26,442	26,881	247	13,657	13,904	11	203	214
Irrigable areas	...	...	1,05,750	...	...	72,750	...	...	15,250	...	...	35,100	...	...	45,300	...	...	20,000

30. From this it will be seen that the Taldundah, Machgong, and High Level canals show an increase, and the Kendrapara, Gobri, and Pattamundi canals a decrease in irrigated areas. A better percentage is anticipated on the High Level canal on the completion of embankments now in hand for the protection of the area east of the Trunk Road from the floods of the Gangooti. The 2nd and 3rd ranges of this canal were brought under the Irrigation Act for the first time during the year, but owing to favourable rainfall the area assessed was insignificant. Moreover, the ryots who had in previous years received water free of charge, held off, in hopes of obtaining a reduction in the rates. These ranges have not as yet been provided with distributaries. Until this is done, no large area can be irrigated. The cost will be included in the revised estimates about to be submitted.

31. The canals in operation and the toll collections were as follow:—

CANAL.	Length open. Miles.	Toll Collections. Rs.	Collection per mile. Rs.
Taldundah	27	2,878	93
Machgong	4		
Kendrapara	39	27,308	700
Gobri	15	8,045	537
High Level, Range I	33	9,626	292
Ditto " II	12½	13,029	1,042
Ditto " III	17	1,503	88
TOTAL	147½	62,389	423
Receipts from Government Transport Service . . . . .	...	35,686	
		98,075	

32. The collections in previous years were—

	Rs.
1872-73	10,044
1873-74	18,577
1874-75	21,412
1875-76	16,377
1876-77	22,881
1877-78	33,844
1878-79	57,042

33. There has been a considerable falling-off in the traffic on the canals, as shown in the following statement:—

YEAR.	Length of canal open.	Number of boats.	Tonnage.	Value of cargo.	Tollage.
	Miles.	No.	Tons.	Rs.	Rs.
1878-79	133	14,042	129,646	40,79,504	62,343
1879-80	147½	11,500	110,185	30,23,461	59,220
DIFFERENCE	+14½	-2,542	-19,461	-10,56,043	-3,123

34. The above statements include the carriage of stores and materials for Government. Excluding this, the following shows the result of private traffic only as compared with last year:—

NAME OF CANAL.	Miles open.	Tollage.		Number of boats.		Tonnage.		Value of cargo.		Tollage per mile of canal.	
		1878-79.	1879-80.	1878-79.	1879-80.	1878-79.	1879-80.	1878-79.	1879-80.	1878-79.	1879-80.
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Talundah	27	1,594	2,256	839	701	13,319	12,181	1,76,143	86,468	51.41	72.77
Maehgong	4										
Kendrapara	39	35,799	33,906	6,699	5,079	55,770	43,772	31,85,142	23,07,464	668	628
Gohri	15										
High Level Range I	33	6,923	5,805	1,830	1,460	12,392	9,596	5,08,012	3,31,070	209.78	175.90
Ditto " II	124	2,178	3,364	889	1,469	4,032	7,517	1,42,395	2,42,306	174.24	399.12
Ditto " III	17	558	1,138	156	336	1,053	2,788	16,186	35,872	32.82	66.94
TOTAL	1474	47,052	46,469	10,413	9,045	86,566	75,854	40,27,777	30,01,240	319	315

From the above it appears that, while the falling off in private traffic has been large, the tollage has hardly been effected; but it must be remembered that in November 1878 the tolls during the dry months were doubled, which accounts for the apparent discrepancy. The increase in traffic on the second and third ranges of the High Level canal is due to the fact that tolls were first collected on these ranges in October 1878, so that the tollage shown for 1878-79 represent only six monthly collections.

35. Examination of the details of articles carried shows that the decrease is mostly in food-grains, due, as stated by the Superintending Engineer, to the dulness of the export trade of Orissa, consequent on the exhaustion of the stock of rice in the district, caused by the abnormal demand for the Madras famine.

36. The following statement shows the particulars of traffic during 1879-80, as compared with 1878-79:—

	TONNAGE OF CARGO.		VALUE OF CARGO.	
	1878-79.	1879-80.	1878-79.	1879-80.
	Tons.	Tons.	Rs.	Rs.
Articles of food	42,054	30,514	28,36,605	23,12,720
Stimulants	19	12	14,000	44,000
Clothing	48	3	27,840	3,000
Staples of manufacture	1,225	1,200	2,59,890	2,08,588
Building materials	8,708	6,350	3,35,057	2,69,153
Live-stock . . . . .	...	...	...	...
Fuel	448	461	1,241	995
Cooking utensils and other domestic imple- ments	130	80	1,520	651
Miscellaneous	33,949	37,234	5,51,773	1,62,133
TOTAL	86,581	75,854	40,27,926	30,01,240

37. The steam-launch *Pioneer* has continued to run between Chandbally and Cuttack towing passenger barges. The earnings amounted to Rs. 35,686 against an expenditure of Rs. 31,523. A new steamer for this service has been nearly completed in the shops at Cuttack.

38. The following table shows the receipts for the past eight years:—

	Water-rates.	Navigation.	Miscellaneous.	TOTAL.
	Rs.	Rs.	Rs.	Rs.
1872-73	19,071	10,044	7,508	36,623
1873-74	17,412	18,577	7,846	43,835
1874-75	20,382	21,412	6,691	48,485
1875-76	20,330	16,377	8,783	45,490
1876-77	40,378	22,881	11,298	74,557
1877-78	1,17,818	33,844	9,445	1,61,107
1878-79	1,16,416	57,042	8,546	1,82,004
1879-80	1,57,747	98,075	13,096	2,69,518

From this it appears that there has been an increase under all heads during the year. That under irrigation is chiefly due to the arrears of revenue having been more promptly realised than in former years. The greater portion of the increase under navigation is owing to the item Government Transport Service, receipts under which had not previously been included. The miscellaneous revenue shows a satisfactory increase as follows:—

	1879-80.	1878-79.	Increase.	Decrease.
	Rs.	Rs.	Rs.	Rs.
Miscellaneous receipts by sale of water	8	8	...	...
Receipts from plantations	786	451	335	...
Do. from other canal produce	960	498	462	...
Rents of buildings	2,783	2,604	179	...
Do. of lands	3,891	2,133	1,758	...
Do. of fisheries	63	134	...	71
Miscellaneous and other receipts	5,205	2,718	2,487	...
TOTAL	13,696	8,546	5,221	71

39. The working expenses are shown in the following statement:—

PARTICULARS.	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1.—Maintenance.								
Works	1,63,884	74,605	1,17,547	1,36,856	1,40,494	1,37,044	1,47,113	2,58,748
Establishment, including direc- tion and accounts	26,552	9,668	20,100	33,601	31,639	32,509	39,073	51,918
Tools and plant . . . . .	...	683	18,070	5,823	11,688	8,234	17,238	8,380
Profit and loss	30	...	...	...	...	...	...	...
Refunds of revenue . . . . .	...	...	...	...	...	41	623	512
TOTAL MAINTENANCE	1,90,466	84,756	1,55,717	1,76,180	1,83,821	1,77,828	2,04,047	3,19,567
2.—Revenue Management.								
Irrigation establishment	41,382	38,607	35,016	25,785	25,005	32,232	27,598	38,704
Navigation ditto	6,154	5,828	5,694	5,653	5,835	6,012	7,445	8,153
TOTAL REVENUE MANAGEMENT	47,536	44,435	40,710	31,438	30,840	38,244	35,043	46,947
TOTAL WORKING EXPENSES	2,38,002	1,29,191	1,96,427	2,07,618	2,14,661	2,16,072	2,39,090	3,66,514

The total working expenses amounted to Rs. 3,66,514 as follows:—

	Rs.
Maintenance	3,19,567
Irrigation establishment	38,794
Navigation ditto	8,153
TOTAL	3,66,514

40. The receipts therefore fell short of the expenses by Rs. 96,996, or, if the earnings of the year, as shown in paragraph 15, be taken, there still remains a deficit of Rs. 92,709.

41. In the revenue report for last year, it was noticed that the reduction in the cost of irrigation revenue management was very satisfactory. As has been already remarked in paragraph 24 of this report, a still further reduction has been effected in the year under review, which is likely to be increased in the year 1880-81. This result is chiefly due to the careful management and tact of Mr. Wylly, the Deputy Revenue Superintendent in charge.

42. The expenditure on maintenance was unusually heavy, amounting to Rs. 2,58,748, against Rs. 1,47,133 in the previous year, chiefly owing to the extensive repairs to the Naraje and Mahanuddy weirs, rendered necessary by the injury done during the excessive floods of August 1879. The charges for silt clearance of the Taldundah Canal were also very heavy, in consequence of the accumulation of the previous year, when the usual annual clearance was not carried out.

43. The following tables show the cost of maintenance of the canals and distributaries as compared with the three previous years:—

(1).—MAINTENANCE OF CANALS.

YEARS.	Length of canal open.	Cost of main-tenance.	Cost per mile.
	Miles.	Rs.	Rs.
1876-77	114	65,778	577
1877-78	166	65,639	395
1878-79	181	87,714	484
1879-80	210	1,09,527	521

(2).—MAINTENANCE OF DISTRIBUTARIES.

YEARS.	Length of distributary open.	Cost of main-tenance.	Cost per mile.
	Miles.	Rs.	Rs.
1876-77	554	23,653	42½
1877-78	587	17,567	30
1878-79	587	26,303	44½
1879-80	590	25,649	43½

Full particulars and details for each canal will be found in the Superintending Engineer's report, paragraphs 45 to 55.

44. The result of the experiments on the yield of irrigated and unirrigated crops is given in the Superintending Engineer's report, paragraphs 23 to 26. Under the Taldundah Canal the principal rice crop, *sarud*, gave 31·23 maunds of paddy per acre, while the unirrigated gave only 23·83 maunds, the difference in favour of the irrigated crop being 7·40 maunds. Under the Kendrapara Canal the results are shown for three classes of land as follows:—

CLASS OF LAND.	IRRIGATED.		UNIRRIGATED.		DIFFERENCE.	
	Paddy.	Straw.	Paddy.	Straw.	Paddy.	Straw.
First class	28·48	35·28	18·05	17·12	10·43	18·18
Second do.	22·77	24·18	16·17	13·10	6·60	11·08
Third do.	21·78	19·08	12·09	9·94	9·69	9·12

In paragraphs 24 and 25 of his report, the Superintending Engineer shows that the average gain per acre to the cultivation by irrigation, after deducting water-rate and enhancement of land rent, amounted under the Taldundah Canal to Rs. 2·69 on the principal rice crop; while under the Kendrapara Canals it was

- * Kendrapara.
- Gobri.
- Patamundi, I, II, & III.
- High Level Range I, II, & III.

as much as Rs. 10·10 per acre; the average gain under all the canals* in the Brahmini-Byturni

Division being Rs. 2·95 per acre.

MIDNAPORE CANAL.

45. The capital, interest, and revenue accounts of this canal are shown below:—

CAPITAL ACCOUNT.

		Outlay during 1879-80.	Outlay to end of 1879-80.
		Rs.	Rs.
<i>Direct charges.</i>			
Works		67,989	50,84,436
Establishment		81,694	18,33,251
Tools and plant		41,338	5,58,060
Suspense balances		(—)27,865	39,728
	TOTAL	1,63,156	75,15,474
		2,624	25,001
DEDUCT RECEIPTS ON CAPITAL ACCOUNT			
	NET OUTLAY	1,60,532	74,90,473
<i>Indirect Charges.</i>			
Capitalisation of abatement of land revenue . . . . .		...	...
Loss by exchange		18,844	1,69,046
Leave and pension allowances . . . . .		...	...
	TOTAL INDIRECT CHARGES	18,844	1,69,046

INTEREST ACCOUNT.

	Rs.
Interest to end of 1878-79	24,02,276
Do. for 1879-80	3,33,459
TOTAL TO END OF 1879-80	27,25,734

REVENUE ACCOUNT—(ACTUALS).

	EXPENDITURE			RECEIPTS	
	During 1879-0.	To end of 1879-80.		During 1879-80.	To end of 1879-80.
	Rs.	Rs.		Rs.	Rs.
Works (extensions and improvements)	10,068	40,401	Water-rates	1,30,140	5,60,363
Repairs and maintenance	84,420	8,31,722	Navigation	1,05,518	5,47,775
Establishment	42,879	4,16,737	Miscellaneous	11,567	67,082
Tools and plant	17,036	51,128			
Refunds of revenue . . . . .	...	17			
TOTAL	1,54,403	13,40,005	TOTAL	2,47,225	11,75,220
Profit	92,822	(—)1,64,785			

46. The total debt for unpaid working expenses and interest amounted for the year to Rs. 2,40,637, and up to the end of the year to Rs. 29,60,520.

47. The expenditure on the canal and the earnings are given below:—

REVENUE ACCOUNT—(EARNINGS).

Expenditure.	Amount.	Earnings.	Amount.
	Rs.		Rs.
Works	94,488	Water-rates	1,53,900
Establishment	42,879	Navigation	1,05,518
Tools and plant	17,036	Miscellaneous	11,567
TOTAL	1,54,403	TOTAL	2,70,985
Profit	1,16,582		

48. During the year irrigation from the Midnapore canal has made immense progress, and the limit to which water can be given has been nearly reached. The total area irrigated and under assessment during 1879-80 was 100,178 acres, against 58,731 acres of the previous year and 19,819 in 1877-78.

49. The periods for which leases have been granted and the acreage under each are as follow:—

	Acrea.
Six years' lease	1,295
Five years' "	94,217
Four years' "	2,635
Three years' "	76
Annual "	1,355
TOTAL	100,178

50. The great increase in the irrigated area must no doubt be ascribed chiefly to the deficient rainfall of the year, which amounted to only 38.11 inches at Midnapore, and 36.02 inches at Panchkoora, against an average of the last ten years of 53.18 and 52.64 respectively. In the first half of the kharif season the rainfall was particularly scant. All the demands for canal water were satisfactorily met, and the canal is thoroughly popular; on this point the Deputy Revenue Superintendent states in paragraph 4 of his report:—"People living outside the irrigable area now envy the position of

those who reside within it, and instances of emigration, though still few in number, from the unirrigable to the irrigable area, purely on account of the benefits to be derived from the canal, may be cited. It is now an undisputed fact that, while the Government irrigators are paying off their debts, and rapidly extricating themselves from the mahajuns' clutches, the cultivators who are beyond reach of the Government canal are getting more and more hopelessly involved in debt, both in paddy and hard cash." Again, in paragraph 15:—"I should, besides, in this place notice an unmistakeable proof of their appreciation of the canal by the land-holding class of Midnapore during the last-mentioned year. Pergunnahs Dhakiabazar and Bhunjbhoom belong to the Midnapore zemindary; the former is within reach of the Government canal, while the latter is not. Both these pergunnahs were offered to be let out in *putnee* during the year 1879 80; but while Dhakiabazar was greedily sought after by hundreds of people, and sold by the zemindar on the most advantageous terms, very few were willing to take a *putnee* in Bhunjbhoom, simply because canal irrigation was not there available. I may further add that within the irrigable area the sale of *jotedaree* right was hitherto unknown, but such sales are now frequent, and they fetch very fair prices to the vendors. The area of uncultivated land also within the irrigable area is being gradually diminished." The Collector of Midnapore remarks on this subject:—"The canal is in high favor with the people of the irrigated area from Midnapore to Panchkoora, and applications for extension of some of the existing channels, and for the construction of new ones, are frequently received in my office." The Commissioner also reports that:—"The present state and prospects of irrigation in Midnapore could not well be better, inasmuch as the greater part of the irrigable area has been leased. It is essential, if this satisfactory state of affairs is to be maintained, that the canal be kept in thorough repair and the distributaries extended." It was with this object in view, and to enable us to meet our engagements, as regards water-supply, that the canal was widened this year.

51. The Superintending Engineer in his report, paragraph 11, and paragraphs 17 to 21, enters largely into the subject of the duty of the water; but as there is still much doubt regarding the actual discharge of the canal, the result cannot be stated with certainty. The calculations of the discharge have not been based on velocity observations in the channels, but on the head of water, as ascertained from the gauge readings at the head sluice, and the uncertainty lies in the coefficient which should be employed in the calculation. Usually .5 has been adopted, but Mr. Appjohn, in a series of experiments, has shown that .8, the theoretical coefficient, is nearer the truth. For purpose of comparison it will suffice to make use of the former. In future, velocity observations in the channel itself will be made.

52. In the early part of the season, between 21st June and 31st July, when the first watering was given and irrigation from the canal was very little assisted by rainfall, the area irrigated under the Midnapore weir was 58,650 acres, and the average discharge of the canal (calculated by the coefficient .5) 600 cubic feet per second. Each cubic foot of water therefore watered on an average $2\frac{1}{2}$ acres per diem, and the duty for the 41 days was 96 acres. In the previous year duty was only 58 acres; the increase was therefore 60 per cent. at the same time that the rainfall was 20 per cent. less. Calculating from the discharge of the distributaries, the duty was 107 acres per cubic foot per second. These satisfactory results were obtained by the strictest economy in distribution and prevention of waste.

53. The duty of the water discharged over the Panchkoora weir was 18 acres per cubic foot per day, or 68 acres for the whole period. This is considerably less than the duty for the canal under the Midnapore weir, partly owing to the smaller rainfall, but chiefly to the incomplete state of the distributaries, and the low, flat country over which the water had to be taken. The ryots still show great apathy in the construction of village channels, and also in keeping up the *aits* or small bunds round their fields to prevent wastage.

54. The following statement shows the assessments and collections under water-rates for 1879-80, as compared with previous years :—

YEAR.	Assessments.	Recoveries and remissions.	Balance outstanding at end of year.	Percentage of recoveries to assessments.
	Rs.	Rs.	Rs.	Rs.
1874-75	1,17,060	67,145	49,874	57
1875-76	87,789	25,576	61,713	29
1876-77	49,156	4,703	44,453	9
1877-78	29,960	7,961	21,999	26
1878-79	88,777	62,717	26,060	70
1879-80	1,51,587	1,07,140	44,447	70.6

From this it will be seen that, although there was an outstanding balance at the close of the year of Rs. 44,447 on account of the year's assessments, against Rs. 26,060 only of the previous year, the percentage of recoveries to assessments was 70.6, which is higher than in any former year. The year opened, however, with an actual balance of Rs. 25,686, the assessments falling due were Rs. 1,53,900, making a total for realization of Rs. 1,79,586. Of this sum, Rs. 1,30,140 were collected and Rs. 462 remitted, leaving a balance at the end of the year of Rs. 48,984. Regarding the uncollected balance, the Commissioner remarks that "there was some laxity in enforcing prompt payment, which must in future be corrected." The Collector anticipates an improvement in the current year.

55. The miscellaneous revenue, which amounted in the year to Rs. 12,541, is composed of the following items :—

	Rs.
Land rent	5,846
Fruit rent	40
Fisheries	951
Koyali	4,086
Grass	3
Miscellaneous	1,615
TOTAL	12,541

56. The following statement shows the assessments and collections under this head :—

YEAR.	Assessments.	Collections.	Balance.
	Rs.	Rs.	Rs.
1875-76	5,828	2,827	3,001
1876-77	7,789	4,931	2,858
1877-78	8,349	6,302	1,962
1878-79	12,000	5,940	7,060
1879-80	12,541	8,184	4,357

This shows a falling-off in the assessments of miscellaneous revenue of Rs. 459 as compared with those of last year. This decrease is due to the reduction in *koyali* rent. On this subject the Collector reports as follows :—

"In regard to *koyali* jumma no improvement can well be expected. The zemindary *koyali* ghâts that have recently been established in contiguity to the Government *koyali* ghâts get hold of the carriers of produce first, because they are nearer to the interior whence the produce comes than the canal; and of course they derive the *koyali* fees that the Government *koyals* would otherwise get. There is nothing, however, illegal in the competition; no force or compulsion has been hitherto said to have been used by the zemindary *koyals*, and they have a perfect right to establish ghâts in their own land, notwithstanding the injury they are causing Government. I am

of opinion that nothing can be done with a view to improve the condition of the canal koyali ghats, and we must rest content with the deterioration in the revenue from miscellaneous sources."

The collections under miscellaneous revenue amount to Rs. 8,184 against Rs. 5,940 last year. This is a great improvement, though the balance remaining to be realized, Rs. 4,357, is still comparatively large.

57. The navigation revenue of the Midnapore canal amounted during the year to Rs. 1,05,518, of which the receipts from tollage were Rs. 91,861, and those from Government steamers Rs. 13,657. The tollage collections for the last ten years are as follow :—

Year.	Toll collections. Rs.
1870-71	11,781
1871-72	12,985
1872-73	20,994
1873-74	34,104
1874-75	44,886
1875-76	51,810
1876-77	67,651
1877-78	1,06,917
1878-79	77,340
1879-80	91,861

58. Leaving out the figures for 1877-78, which were abnormally high owing to the demand for rice for export to Madras during the famine, the statement shows a steady increase in the traffic on the canal.

59. The state and classification of the canal traffic for the last eight years are shown in the following tables :—

CANAL TRAFFIC.

DESCRIPTION.	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.
Miles opened at end of year . No.	24	48	48	48	48	48	48	48
Toll collections . Rs.	20,994	34,104	44,886	51,810	67,651	1,06,917	77,340	91,861
Rate of tolls per mile . "	874	710	935	1,079	1,401	2,227	1,610	1,918
Boats, including empties . No.	26,407	29,907	29,967	26,439	41,872	52,351	48,324	52,044
Measurement tonnage of boats, excluding empties . Tons	103,314	120,098	168,090	189,414	239,913	360,968	290,483	320,927
Passengers carried . No.	...	...	...	145,447	181,071	125,013	128,098	180,294
Estimated value of cargo . Rs.	76,25,108	91,65,525	1,18,23,308	1,22,07,919	1,13,26,866	1,71,09,384	1,50,51,350	1,59,41,496

CLASSIFICATION OF TRAFFIC.

DESCRIPTION.	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Articles of food .	59,574	50,541	61,407	60,425	1,14,336	201,256	108,339	118,440
Stimulants .	2,971	4,382	4,327	8,228	10,819	18,109	14,765	16,115
Clothing .	7,601	7,073	7,355	6,568	5,801	5,893	5,950	10,223
Staples of manufacture .	11,269	14,610	14,760	20,172	19,399	19,104	24,942	29,080
Building materials .	4,895	5,023	7,240	11,140	12,030	21,573	28,268	36,325
Fuel .	18,173	15,009	5,908	4,707	6,142	8,952	11,568	10,342
Cooking utensils and other domestic implements .	2,533	1,951	1,766	2,135	2,782	3,677	4,633	5,021
Miscellaneous .	16,630	16,366	65,629	67,021	67,604	79,311	79,518	94,737

60. In the transport service between Oolobarra and Midnapore three steam-launches have been employed. The Superintending Engineer, in paragraphs 39-40 of his report, gives particulars of their working, and explanation of the fact that they have hitherto run at a loss to Government, the working expenses having amounted to Rs. 18,235, while the receipts were only

Rs. 13,668, showing a loss of Rs. 4,567 in the year. The service is now being organized on a better footing, and it is confidently hoped it will prove a financial success, as it certainly will be a great boon to the public.

61. The revenue realized during 1879-80, compared with that of 1878-79, is shown below :—

	1878-79.	1879-80.
	Rs.	Rs.
Water-rates	85,014	1,30,140
Navigation	77,340	1,05,518
Miscellaneous	8,356	11,567
TOTAL RECEIPTS	1,70,710	2,47,225
DEDUCT WORKING EXPENSES	1,72,836	1,54,403
BALANCE NET REVENUE	(—)2,126	(+)92,822

The large increase in the revenue and the reduction in the working expenses is very satisfactory.

62. The following tabular statements show the details of revenue and working expenses of the year as compared with previous years :—

REVENUE RECEIPTS.

YEAR.	Water-rates.	Navigation.	Miscellaneous.	TOTAL.
	Rs.	Rs.	Rs.	Rs.
1872-73	23,556	20,994	6,714	51,264
1873-74	35,823	34,104	2,711	72,638
1874-75	67,015	44,886	4,316	1,16,217
1875-76	52,791	51,810	6,508	1,11,109
1876-77	61,460	67,651	7,876	1,36,987
1877-78	53,483	1,06,917	9,693	1,70,093
1878-79	85,014	77,340	8,356	1,70,710
1879-80	1,30,140	1,05,518	11,567	2,47,225

WORKING EXPENSES.

	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
I.—Maintenance, viz.—								
Works and repairs	62,844	88,486	92,185	1,13,225	1,09,500	1,41,334	1,09,211	94,489
Establishment, including direction and accounts	9,705	15,474	19,425	26,896	27,662	33,006	28,513	19,162
Tools and plant . . . . .	...	...	714	4,164	9,714	6,117	13,083	17,036
TOTAL MAINTENANCE	72,549	1,03,960	1,12,324	1,43,787	1,46,885	1,80,457	1,50,807	1,30,686
II.—Revenue management, viz.—								
Irrigation establishment	9,316	10,701	11,006	16,493	17,245	16,189	14,802	18,377
Navigation	5,133	5,896	7,097	7,119	7,149	7,151	7,227	7,340
TOTAL REVENUE MANAGEMENT	14,449	16,597	18,103	23,612	24,394	23,340	22,029	23,717
III.—Refunds of—								
Revenue . . . . .	...	...	...	...	...	17	...	...
TOTAL WORKING EXPENSES	86,998	1,20,557	1,30,427	1,67,399	1,71,279	2,03,814	1,72,836	1,54,403

The reduction in percentage of irrigation establishment on the collections is very considerable. In the year under notice it was 12.5 only, against 17.4 in 1878-79 and 30 in 1877-78.

63. The following statements show the cost of maintenance of the main canal and distributaries, as compared with previous years :—

Main Canal.

YEAR.	Length of canal open.	Cost of maintenance.	Cost per mile.
	Miles.	Rs.	Rs.
1872-73	24	26,543	1,106
1873-74	48	42,144	878
1874-75	48	56,281	1,172
1875-76	48	63,303	1,319
1876-77	48	65,343	1,361
1877-78	48	77,521	1,615
1878-79	48	50,787	1,246
1879-80	48	50,943	1,186

Distributaries.

YEAR.	Length of distributaries open.	Cost of maintenance.	Cost per mile.
	Miles.	Rs.	Rs.
1872-73	103	7,012	68
1873-74	146	7,251	50
1874-75	178	8,917	50
1875-76	228	13,176	58
1876-77	251	25,025	99
1877-78	255	22,726	89
1878-79	254	20,903	82
1879-80	254	16,159	63

The details of the work will be found in paragraph 5 of the Superintending Engineer's report.

64. The maintenance charges for both the canal and distributaries have steadily decreased for the last three years. The Superintending Engineer does not think that it will be possible to reduce the charges on the main canal much lower, as the chief expenditure is on account of earthwork in silt clearance below the head sluices at Midnapore and Panchkoora, and from the bed of the two tidal reaches between the Roopnarain and Hooghly rivers. About Rs. 41,000 out of a total sum of Rs. 56,943 were expended on this work, and it is estimated that it will be necessary to clear nearly 40 lakhs of cubic feet of silt annually. It will probably be found possible to somewhat reduce the cost of repairs on the distributaries as soon as they are completed, but it is not anticipated that the expenditure will ever be much less than from Rs. 50 to 60 per mile, on account of the damage done by cattle trespass, which it is impossible to prevent.

65. The following statement shows the results of crop experiments made by the Executive Engineer as compared with last year :—

	1878.			1879.		
	Paddy.	Straw.	Rainfall.	Paddy.	Straw.	Rainfall.
MIDNAPORE WEIR.						
Irrigated	Mds. 23.24	Mds. 61.40		Mds. 20.31	Mds. 46.47	
Unirrigated	15.32	31.30		6.32	14.14	
Difference in favor of irrigation .	7.92	30.10	53.42	13.99	26.33	37.70
PANCHKOORA WEIR.						
Irrigated	33.43	60.17		20.00	46.58	
Unirrigated	28.62	54.03		16.51	22.88	
Difference in favor of irrigation .	4.81	6.14	42.96	12.49	23.70	32.07
Hidgellee—Unirrigated	23.63	39.70	54.01	22.46	44.62	46.04

The result of this year's experiments shows, in a most marked manner, the great advantages of irrigation in a year of scant rainfall such as that of 1879.

66. The Deputy Revenue Superintendent, in conducting a similar set of experiments, divided the irrigated lands as he did last year into three zones, the first being nearest to, and the last most remote from, the distributary. Certain fields were selected from each with the following results:—

	MIDNAPORE WEIR.		PANCHKOORA WEIR.		TIDAL REACHES.	
	Average yield of irrigated crop per acre.	Average yield of unirrigated crop per acre.	Average yield of irrigated crop per acre.	Average yield of unirrigated crop per acre.	Average yield of irrigated crop per acre.	Average yield of unirrigated crop per acre.
First zone . . .	24.69	} 4.83 }	29.29	} 7.35 }	20.17	18.65
Second „ . . .	25.77		27.66			
Third „ . . .	14.16		26.77			

In the 5th paragraph the Deputy Revenue Superintendent points out that the yield of the unirrigated crop was 4.83 maunds' paddy under the Midnapore weir per acre, and 7.35 under the Panchkoora weir, against 18 and 26 maunds respectively in the preceding year.

HIDGELLEEE TIDAL CANAL.

67. The capital, interest and revenue accounts are given below—

CAPITAL ACCOUNT.

	Outlay during the year.	Outlay to end of year.
<i>Direct Charges.</i>	Rs.	Rs.
Works	12,06,239
Establishment	4,40,790
Tools and plant	57,565
	...	17,73,614
Deduct receipts on capital account	915
	...	17,72,699
<i>Indirect Charges.</i>		
Capitalization of abatement of land revenue	11,206
Loss by exchange
Leave and pension allowances	38,597
TOTAL INDIRECT CHARGES	44,803

INTEREST ACCOUNT.

	Rs.
Interest to end of previous year	6,86,260
Ditto for the year	79,771
TOTAL INTEREST TO END OF 1879-80	7,66,031

REVENUE ACCOUNT—(ACTUALS).

	EXPENDITURE.			RECEIPTS	
	During the year.	To end of year.		During the year.	To end of year.
	Rs.	Rs.		Rs.	Rs.
Works (maintenance)	30,607	2,01,019	Water-rates . . . . .	...	2,611
Establishment	11,677	73,157	Navigation	44,918	3,58,693
Tools and plant . . . . .	...	4,103	Miscellaneous	863	6,522
TOTAL	42,284	2,78,279		45,781	3,67,826
PROFIT	3,497	89,547			

68. The navigation receipts of the Hidgellee canal amounted to Rs. 44,918, against Rs. 59,723 in the year 1878-79, showing a falling-off of Rs. 14,805, caused by the closure of the canal for silt clearance from the middle of January to the end of the official year. The Superintending Engineer remarks that the closure of the canal need not have been so long, had it not been for an outbreak of small-pox which dispersed the laborers and hindered the work.

69. The total revenue and working expenses for 1879-80, compared with 1878-79, are as follow :—

	1878-79.	1879-80.
	Rs.	Rs.
Navigation receipts	59,723	44,918
Miscellaneous	1,070	863
TOTAL RECEIPTS	60,793	45,781
DEDUCT WORKING EXPENSES	23,180	42,244
BALANCE—NET REVENUE	37,613	3,497

The large increase in the working expenses, "from Rs. 572.3 to Rs. 1,458 per mile of canal," was due to the cost of silt clearance during the closure. In 1878-79 the canal was not closed for repairs.

70. The details of the traffic, year by year, from 1872-73 are given in the following tables :—

COMPARISON OF TRAFFIC.

	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.
Miles of canal open No.	29	29	29	29	29	29	29	29
Toll collections Rs.	14,454	27,978	52,209	22,540	44,572	60,971	59,723	44,918
Rate of toll per mile of canal	556	966	1,800	777	1,537	2,102	2,059	1,549
Number of boats No.	7,721	13,918	15,443	10,968	22,818	23,882	22,966	16,311
Measurement tonnage of boats, exclusive of empties Tons	19,153	63,077	132,282	67,997	131,488	154,426	164,687	120,021
Passengers carried No.	...	...	...	...	...	1,933	3,623	2,061
Estimated value of traffic Rs.	10,85,236	14,33,734	28,96,109	13,38,440	19,71,692	31,30,503	41,55,253	25,86,081

CLASSIFICATION OF GOODS.

	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Articles of food	15,430	53,689	87,535	37,852	84,248	101,230	105,687	80,423
Stimulants	1,257	1,852	2,005	896	1,900	706	1,719	768
Clothing	23	194	308	40	180	117	241	98
Staples of manufacture	67	786	971	1,341	1,630	1,202	2,639	1,129
Building materials	661	1,249	2,183	2,759	3,076	6,839	8,601	7,344
Fuel	509	575	1,144	1,678	1,045	768	1,729	1,164
Cooking utensils and domestic imple- ments	32	318	336	434	297	250	388	819
Miscellaneous	927	14,043	35,100	23,004	24,103	47,321	42,773	23,744

SONE CANALS.

71. The capital, interest, and revenue accounts of these canals are given in the following statements:—

CAPITAL ACCOUNT.

	Outlay during the year.	Outlay to end of year.
	Rs.	Rs.
<i>Direct Charges.</i>		
Works	6,28,418	1,57,02,031
Establishment	3,58,081	42,96,415
Tools and plant	1,14,627	16,71,338
Suspense balances	(—) 60,243	3,02,750
TOTAL	10,35,883	2,19,72,534
DEDUCT RECEIPTS ON CAPITAL ACCOUNT	50,094	2,09,748
	9,85,789	2,17,62,786
<i>Indirect Charges.</i>		
Capitalization of abatement of land revenue	2,361	20,910
Loss by exchange	—	—
Leave and pension allowances	68,296	7,34,234
TOTAL	65,657	7,55,144

INTEREST ACCOUNT.

	Rs.
Interest to end of previous year	44,96,405
Ditto for the year	9,57,145
TOTAL	54,53,550

REVENUE ACCOUNT—(ACTUALS).

	EXPENDITURE			RECEIPTS	
	During the year.	To end of year.		During the year.	To end of year.
<i>I.—Maintenance & Repairs—</i>	Rs.	Rs.		Rs.	Rs.
Works	1,91,820	8,31,937			
Establishment, including direction and accounts	41,929	2,45,088	Water-rates	4,44,716	9,88,305
Tools and plant	4,586	9,468	Navigation	39,359	1,00,817
TOTAL MAINTENANCE	2,38,335	10,86,493	Miscellaneous	47,013	1,05,464
<i>II.—Revenue Management—</i>					
Irrigation establishment	1,06,534	1,74,708			
Navigation ditto	10,483	31,061			
TOTAL REVENUE MANAGEMENT	1,17,017	2,05,769			
<i>III.—Refunds of Revenue—</i>	1,945	2,071			
TOTAL WORKING EXPENSES	3,57,297	12,95,233	TOTAL	5,31,588	11,94,586
PROFIT	1,74,291	(—) 1,00,647			

72. The revenue account, calculated on the earnings of the year, is shown below :—

REVENUE ACCOUNT—(EARNINGS).

EXPENDITURE.		RECEIPTS.	
	Rs.		Rs.
<i>I.—Maintenance and Repairs—</i>			
Works	1,91,820		
Establishment, including direction and accounts	41,929		
Tools and plant	4,586	Water-rates	4,60,200
TOTAL MAINTENANCE	2,38,835	Navigation	39,859
		Miscellaneous	47,013
<i>II.—Revenue Management—</i>			
Irrigation establishment	1,06,534		
Navigation ditto	10,483		
TOTAL REVENUE MANAGEMENT	1,17,017		
<i>III.—Refunds of Revenue—</i>	1,945		
TOTAL WORKING EXPENSES	3,57,297	TOTAL	5,56,072
PROFIT	1,98,775		

73. The following is a comparative statement of the irrigated areas assessed during 1878-79 and 1879-80 :—

YEAR.	Kharif. Acres.	Rabi. Acres.	Sugarcane. Acres.	TOTAL. Acres.
1878-79	99,964	77,430	19,624	1,97,018
1879-80	41,182	62,268	27,158	1,30,556
DIFFERENCE	(—)58,882	(—)15,161	(+)7,534	(—)66,462

74. The decrease in the kharif and rabi areas is due to the plentiful rainfall of the year. The Superintending Engineer in his report says: "In the Arrah Division the rainfall was 20·47 inches in excess of that of the preceding year, and 33·57 greater than that of 1877-78. In the Buxar Division the excess was 26·78 inches over that of the year before, and in the Eastern Sone Division 8·42 and 19·86 inches in excess respectively of that of the two years 1878-79 and 1877-78."

75. The following statement gives the particulars of rainfall of three years in the different divisions of the Sone Circle :—

MONTH.	ARRAH DIVISION.			BUXAR DIVISION.			EASTERN SONE DIVISION.		
	1877-78.	1878-79.	1879-80.	1877-78.	1878-79.	1879-80.	1877-78.	1878-79.	1879-80.
April	0·35	0·64	...	Not available	0·01	...	0·15	0·23	...
May	1·62	2·43	0·18		2·21	0·07	4·25	2·18	0·50
June	0·60	2·10	4·48		1·81	7·18	0·62	3·42	4·27
July	4·56	8·83	11·38		7·36	14·87	5·07	9·30	13·44
August	5·39	10·55	12·02		8·80	9·62	8·02	13·93	8·53
September	2·79	4·79	17·59	1·16	5·42	20·43	1·62	4·64	11·35
October	1·95	0·37	4·81	0·76	0·43	3·84	2·91	0·23	4·38
November . . . . .	...	1·21	...	...	0·86	...	...	0·58	...
December . . . . .	...	...	...	...	...	...	0·32	...	...
January	1·55	...	0·04	1·18	0·04	...	0·82	...	...
February	0·20	1·10	1·99	0·24	1·85	1·78	...	0·81	1·47
March . . . . .	...	...	...	0·06	...	...	0·10	...	...
TOTAL	18·92	32·02	52·49	Incomplete	29·10	55·97	23·88	35·32	43·74

With such an abundant rainfall it is not surprising that the irrigated area was less than in previous years.

76. In the report of last year the great increase in the area of sugarcane irrigated was prominently noticed. A still further increase has taken place in the year under review, the area of this crop watered having reached 27,158

acres. The Superintending Engineer is of opinion that the supply of water in the Sone during April and May in a dry year will not admit of irrigation being guaranteed for more than 30,000 or 40,000 acres. On the subject of the spread of sugarcane cultivation in Shahabad, the Commissioner of Patna writes:—"In illustration of the prosperity of the agricultural classes in Shahabad, I would note that the cane cultivators in the district have, with a view to introduce an improved method for the manufacture of molasses, bought 9,000 of the Bihia mill patented by Messrs. Thomson, Mylne and Co., at an outlay of Rs. 6,30,000. This is the result of the impetus which the canal irrigation has given to the cultivation of sugarcane. Before the opening of the canals, the area under cane cultivation was only 1,804 acres, whereas it has

* Note—27,158 acres were actually now increased to 22,000* acres, or nearly twelve times the area previously cultivated. This increased cultivation of sugarcane has added considerably to the agricultural wealth of the district, the increase of profit derived from this source being estimated at no less than Rs. 4,73,000 per annum."

77. Comparison of the area leased, that is, for which application for water was made, and actually measured and assessed for water-rate in 1879-80, is given below:—

Crop.	Area leased.	Area irrigated.	Excess irrigated.
	Acres.	Acres.	Acres.
Kharif	53,105	41,132	—11,973
Rabi	34,581	62,266	27,685
Sugarcane	18,668	27,158	8,490
TOTAL	1,06,354	1,30,556	24,202

78. The area irrigated under the different canals and executive divisions is shown in the following table:—

Division.	Canal.	Kharif.	Rabi.	Sugarcane.	TOTAL.
		Acres.	Acres.	Acres.	Acres.
Arrah	Arrah	27,840	41,859	15,060	84,759
Buxar	Main Western, Buxar	8,208	7,945	10,095	26,248
Eastern Sone	„ Eastern Patna	5,089	12,462	2,003	19,554
	TOTAL	41,132	62,266	27,158	130,556

79. The following statement shows the areas of the different descriptions of crops irrigated under the main canals:—

DESCRIPTION OF CROP.	Arrah Canal and its branches.	Main Western and Buxar Canals and their branches.	Patna Canal and its branches.	TOTAL.
	Acres.	Acres.	Acres.	Acres.
Kharif	25,808	7,618	4,713	38,139
Indigo	298	138	206	642
Garden	5	262	23	290
Bhadoi	1,734	447	151	2,332
Sugarcane	15,060	10,095	2,002	27,157
Rabi	40,503	7,447	10,055	58,005
Opium	1,851	236	2,404	3,991
TOTAL	84,759	26,243	19,554	130,556

80. The proportion of flow to lift irrigation was as 88.4 to 11.6 per cent.

81. The total length of canals and distributaries from which irrigation can be given is 217 and 957½ miles respectively, and the area commanded is 1,104,893 acres. The irrigated area was, therefore, barely 12 per cent. of that commanded by the canals.

82. Some progress has been made in the construction of village channels, as noticed by the Superintending Engineer in paragraph 18 of

his report :—"The number of village channels surveyed or constructed during the year by canal officers, as taken from their quarterly reports, amounted to 102 miles surveyed, 55 miles completed, 15 miles under construction, exclusive of those constructed privately by the proprietors of the Jugdispur estate, which have been in hand for some years and now amount to 92 miles. The progress is an advance on previous years, but any great increase in the direction of village channels can only be expected when a dry year occurs, and the want is brought home to the cultivators."

83. In paragraph 65 of the revenue report for 1878-79, it was stated that measures would be adopted to introduce a system of leases for a term of years, based on the assessments of the land. The question has been under consideration during the year, and since its close new rules have been sanctioned by the Lieutenant-Governor and published in the Gazette; they will be more fully noticed in the report for the current year.

84. The year opened with an outstanding balance on account of water-rates of Rs. 3,04,411; the assessments falling due during the year amounted to Rs. 4,69,200, making a total of Rs. 7,73,611. Of this Rs. 4,44,716 were realised, and Rs. 10,517 remitted, leaving a balance at the close of the year of Rs. 3,18,378, of which Rs. 3,00,311 was in Shahábád. The Commissioner states that there is no real unwillingness on the part of the people to pay for water which they have taken, 95½ per cent. of the current demand having been realised. He attributes the failure in collecting the balances to errors in distribution of water, measurements, and assessments during the first seasons after the canals were opened. These faults have, to a great extent, he says, been remedied; but difficulty is still experienced in collecting the arrears due on account of those years. A change of the system of collections has been made from which good results are hoped for.

85. The navigable canals in operation and the amount of toll collections for the year are shown below :—

CANAL.	Length of canal open.	Toll collections.	Collections per mile.
	Miles.	Rs.	Rs.
Main Western	22	5,169	164.09
Buxar	9½		
Arrah	65	8,323	128.05
Main Eastern	7	14,112	164.09
Patua	79		
TOTAL	182½	27,604	151.25

86. The collections in each year since the opening of the canals are as follows :—

	Rs.		Rs.
1876-77	4,852	1878-79	29,332
1877-78	26,774	1879-80	27,604

87. The state of the traffic during the past four years is shown below :—

	1876-77.	1877-78.	1878-79.	1879-80.
Number of miles open at end of year	84	171	174	182½
Toll collections Rs.	4,852	26,774	29,332	27,604
Rate of tolls per mile	58	156	167	151.25
Boats, including empties No.	2,421	8,693	6,878	6,042
Measured tonnage of boats, excluding empties Tons	26,040	81,897	66,389	66,266
Estimated value of cargo Rs.	1,04,399	12,79,257	26,98,541	34,82,626

The above figures represent the total traffic on the canals, inclusive of carriage and materials for the works, but exclusive of the Government steamers' service.

88. Omitting the tolls on boats employed on the Government works and the steamers, the assessments on private traffic show an increase of

92. The revenue from all sources and the working expenses for the last three years were as follows:—

	1877-78.	1878-79.	1879-80.
<i>Receipts—</i>	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>
Water-rates	59,651	8,78,312	4,44,716
Navigation receipts	26,774	29,332	39,859
Miscellaneous	14,867	34,982	47,013
TOTAL	1,01,292	4,37,626	5,31,588
LESS REFUND OF REVENUE	750	276	1,945
TOTAL RECEIPTS	1,00,542	4,37,350	5,29,643
<i>Working expenses—</i>			
Maintenance, including establishment	2,10,828	2,94,084	2,88,335
Irrigation establishment	32,562	66,173	1,06,584
Navigation ditto	8,267	9,071	10,433
TOTAL WORKING EXPENSES	2,51,657	3,70,228	3,55,352
SURPLUS	—1,51,115	67,122	1,74,291

This shows that the working expenses were reduced in the year by Rs. 15,000, and the revenue increased by Rs. 1,10,000.

93. The cost of the irrigation establishment, which does not include any share of engineers' and subordinates' salaries, and the percentage on collections for 1878-79 and 1879-80, are shown below:—

	1878-79.		1879-80.	
	Amount.	Percentage on collections.	Amount.	Percentage on collections.
	<i>Rs.</i>		<i>Rs.</i>	
Permanent and temporary establishment, such as zilladars, amins, measurement khallasies, patrols, &c.	46,089	12.34	55,589	12.50
Establishment employed under the Collectors	18,400	3.59	23,411	5.23
Headmen's fees	6,684	1.79	27,534	6.20
TOTAL	66,173	17.72	1,06,534	23.93

The principal increase is in the headmen's fees which, as noticed in the report of last year, are likely to form a heavy charge against the revenue in future.

The navigation revenue establishment amounted to 38 per cent. on the toll collections, against 34 per cent. in the previous year: this is accounted for by the additional length of canal opened for navigation, which did not result in any increase to the receipts.

94. The cost of maintenance in 1878-79 and 1879-80 is thus compared:—

	1878-79.	1879-80.
	Amount.	Amount.
	<i>Rs.</i>	<i>Rs.</i>
Maintenance and repairs	2,34,812	1,91,589
Establishment (direction and account)	12,185	9,067
Proportion of engineers' and subordinates' salaries	42,776	32,862
Compensation for damage to crops, &c.	1,260	231
Tools and plant	3,051	4,556
TOTAL	2,94,084	2,38,335

95. The maintenance of the Sone weir, 12,461 feet in length, cost Rs. 31,318, or Rs. 2.8 per foot run, as against Rs. 2.12 in the previous year.

96. The cost of maintenance and repairs of the canals in 1879-80 as compared with 1878-79 is as follows :—

Division.	Canal.	Bottom width of canal.	1879-80.			1878-79.
			Length of canal open.	Total cost of repairs.	Cost of repairs per mile.	Cost of repairs per mile.
		Feet.	Miles.	Rs.	Rs.	Rs.
Arrah	Main Western	180		24,016	2,668	5,453
	Arrah	86 to 47	985	27,348	420	592
Buxar	Main Western	120 to 100	12½	4,200	336	124
	Main Eastern	180 to 100	7½	7,048	972	3,095
Eastern Sone	Patna	84 to 47	79	30,898	390	488

97. The cost of maintenance and repairs of distributaries in 1879-80 as compared with 1878-79 is given below :—

Division.	Canal from which distributaries take off.	Distributaries.	1879-80.			1878-79.
			Length under repairs.	Total cost of repairs.	Cost of repairs per mile.	Cost of repairs per mile.
			Miles.	Rs.	Rs.	Rs.
Arrah	Arrah	Bihia (branch canal).	30	4,435	148	284
		Doomraon (ditto)	40	7,910	198	343
Buxar	Arrah and Main Western Buxar	Ordinary distributaries	410	23,080	56	39½
		Ditto ditto	51½	5,434	105	171½

98. Full particulars and details of the repair charges will be found in the Superintending Engineer's report, paragraphs 7 to 11. As explained in the revenue report of last year, the high cost of maintenance of the Main Western and Eastern canals in the Arrah and Eastern Sone Divisions is due to the large quantity of silt deposited over their beds: the short length over which the expenditure is distributed makes the incidence of charge appear high. An average of 2·7 and 2·3 feet in depth of silt was deposited over the first six and five miles of the Main Western and Main Eastern canals respectively, representing in the one case 14,800,000 cubic feet, and in the other 5,800,000 cubic feet which had to be removed. During the last flood season the water has, as far as possible, been supplied to the canal over, instead of under, the head sluice shutters which were cut in two for the purpose. It remains to be seen whether, by this arrangement, any diminution in the quantity of silt entering the canal has been effected.

99. Dredging operations are fully described by the Superintending Engineer in paragraph 9 of his report. Two large bucket and ladder dredgers received from England have been fitted up in the shops at a cost, including all charges, of Rs. 1,37,315, but their working is not satisfactory. Much more useful are the small single bucket dredgers invented by Mr. Fouracres. Of these, seven have been in use, and removed 2,433,400 and 97,300 cubic feet of silt from the Main Western canal and head locks at a cost of Rs. 3·12 and Rs. 3·3 per 1,000 cubic feet respectively. Including cost of repairs, interest, and depreciation, it is calculated that dredging operations will not cost less than Rs. 8 to Rs. 9 per 1,000 cubic feet of silt removed. This is much higher than hand labour; but on the other hand, when dredgers are used, closure of the canals and interruption to traffic and irrigation is avoided. One of the great difficulties that was anticipated in connection with the through navigation of the canals during the dry months, *viz.*, the crossing of the Sone, has been overcome at a trifling cost by the use of the Fouracres dredgers. The Superintending Engineer writes: "During the months of November, December, and January, a channel was dredged in the Sone above the weir to connect the deep channels and establish a through communication from Dehree to Baroon; the channel was without any difficulty maintained, and both steamers and boats were able to pass freely from side to side throughout the dry season. The dredgers used were on Mr. Fouracres' pattern; the

sand excavated, when brought up in the bucket, is deposited by revolving the crane and opening the scoops; it then falls on one side clear of the channel under excavation. The total cost of this operation was Rs. 823, so that the difficulty of preserving a navigable channel during the cold weather and summer months has been overcome at a very small cost."

100. The clearance of weeds from the canals continues to be a source of great expense. No less than Rs. 21,856 were expended on this item alone, as follows:—

	Rs.
Western Main Canal	11,087
Eastern ditto	2,784
Arrah ditto	4,916
Patna ditto	3,069
TOTAL	21,856

The weeds are removed by rakes and chains fitted with spikes, as described by the Superintending Engineer in paragraph 11 of his report. Experiments with a revolving rake worked by steam power have been tried, with every hope of success; and it is confidently expected that by this means the cost of clearing will be reduced, at the same time that the weeds will be more completely kept under than is possible by the contrivances now in use.

101. No trustworthy particulars of the duty of the water in the Sone canals can be given for 1879-80; but orders have been issued for observations to be recorded in the current year on certain selected lines, by which it is hoped reliable results may be obtained.

GENERAL REMARKS.

102. As shown in the report for the year 1878-79, the receipts from the canals in that year exceeded the working expenses by Rs. 45,523. In the current year the excess is Rs. 1,73,614, and had it not been that unusually high floods in Orissa caused much damage to the weirs, and thus entailed heavy expenditure on repairs, there is no doubt the estimated profit, Rs. 3,23,000, would have been realised. Calculating by the earnings of the canals, the surplus on the year's operations would be Rs. 2,26,145 as follows:—

	Rs.
Orissa canals	(-) 92,709
Midnapore "	1,16,582
Hidgellee "	3,497
Sone "	1,98,775
TOTAL	2,26,145

103. The approximate value of the irrigated crops is shown in the following statement:—

	ORISSA CANALS.		MIDNAPORE CANALS.		SONE CANALS.	
	Area irrigated.	Value of crop.	Area irrigated.	Value of crop.	Area irrigated.	Value of crop.
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.
Kharif	105,186	21,07,720	100,178	33,69,500	41,132	8,38,518
Rabi	8,616	1,64,200	...	...	62,266	45,87,526
Perennial	236	50,740	...	...	27,158	30,48,705
TOTAL	109,038	23,18,660	100,178	33,69,500	130,556	84,74,744

104. During the year several of the best and most efficient officers of this branch of the department have voluntarily retired from the service under the Financial Department No. 2079 of 31st February 1879. comparatively favorable terms offered by the resolution noted in the margin. Among them may be specially mentioned Mr. Walker, Superintending Engineer; Messrs. Whitfield, Unwin, and Fouracres, Executive Engineers. It will be difficult to replace these officers, but fortunately it has been found possible to retain Mr. Fouracres' valuable services in the work establishment of the Howrah workshops.

Many excellent subordinates have also left the service. In all no less than 25 engineers and 31 upper subordinates have retired from their branch of the department under the terms of the resolution above quoted.

105. The duties of the department have been efficiently carried on by the officers in charge of the several circles of superintendence. Mr. Rhind in Orissa; Mr. Vertannes in the South-Western; and Major Heywood, R.E., in the Sone Circle. The diligence and care shown by Mr. Hayes, Assistant Engineer, in the Cossye Division, are especially deserving of notice. For the five months during which irrigation spread so rapidly he was in charge of the division and was untiring in his exertions. The following officers are highly spoken of by Major Heywood, R.E., Superintending Engineer, Sone Circle:—

Mr. Odling,	}	Executive Engineers in charge of divisions.
Captain McArthur, R.E.,		
Mr. Williamson,		
„ Foster,	}	In charge of sub-divisions.
„ Monies,		
„ Toogood,		
„ Douglas,		
„ Inglis,		
„ Shaw,		
„ Taylor,		
„ Scotland,		

H. C. LEVINGE, C.E.,
Chief Engineer, Bengal, Irrigation Branch.

19th November 1880.

GOVERNMENT OF BENGAL, PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH.

IRRIGATION OPERATIONS IN BENGAL.

Comparative Statement of Irrigation in 1879-80 and 1878-79.

NAME OF CANAL.	AREA.			AREA IRRIGATED IN 1879-80.				AREA IRRIGATED IN 1878-79.				1879-80, COMPARED WITH 1878-79.	
	Area command- ed.	Area provided with distribu- taries.	Area for which distributaries have been con- structed.	Kharif.	Rabi.	Perennial.	TOTAL.	Kharif.	Rabi.	Perennial.	TOTAL.	Increase.	Decrease.
ORISSA CANALS.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
<i>Mahanuddy Series.</i>													
Kondraparah Canal, includ- ing extension and Gobri Branch	129,400	87,300	87,300	43,021	2,532	92	45,645	43,050	3,469	77	46,595	...	950
Pattamondoo Canal	51,250	...	...	11,790	206	...	11,996	13,930	657	...	14,487	...	2,491
High Level Canal, Range I.	62,600	44,730	44,730	18,657	238	9	18,904	13,642	414	14	14,070	...	166
Talbundah and Machgong Canals	80,350	50,350	50,350	30,515	639	125	37,279	34,978	978	142	36,068	1,181	...
TOTAL MAHANUDDY SERIES	323,600	182,380	182,380	104,983	3,615	226	108,824	103,500	5,517	233	111,250	1,181	3,607
<i>Brahmince and Byturnee Series.</i>													
High Level Canal, Range II	190,385	...	...	203	1	10	214	...	...	...	...	214	...
High Level Canal, Range III	77,535	...	...								
TOTAL BRAHMINCE AND BYTURNEE SERIES	197,920	...	...	203	1	10	214	...	...	...	...	214	...
TOTAL ORISSA CANALS	521,520	182,380	182,380	105,186	3,616	236	109,038	105,500	5,517	233	111,250	1,395	3,607
<i>Midnapore Canal.</i>													
Under the Midnapore Weir	250,000	139,725	117,775	88,831	...	...	88,831	53,434	21	...	53,455	35,376	...
Under the Panchkooarah Weir	67,000	31,800	14,500	10,135	...	...	10,135	3,962	103	...	4,065	6,070	...
Tidal Beaches	16,000	11,500	11,500	1,212	...	...	1,212	1,211	...	...	1,211	1	...
TOTAL MIDNAPORE CANAL	333,000	183,025	143,775	100,178	...	...	100,178	58,607	124	...	58,731	41,447	...
<i>Sone Canals.</i>													
Western Main Canal Series.	1,423,000	803,240	638,578	26,043	40,804	25,155	111,002	93,067	67,284	19,408	179,969	...	68,967
Eastern Main Canal Series.	307,610	336,760	283,910	5,089	12,462	2,008	19,554	6,877	10,046	126	17,049	2,505	...
TOTAL SONE CANALS	1,740,610	1,140,000	922,488	41,132	62,266	27,163	130,556	99,964	77,430	19,634	197,018	2,505	68,967
GRAND TOTAL	2,595,130	1,505,405	1,248,648	246,406	65,882	27,394	339,772	264,071	83,071	19,557	360,999	45,347	72,574

As regards the Orissa and Sone Canals, the figures in columns 2, 3, and 4 are based on recent estimates by the Superintending Engineers. These do not agree with the figures in the statements of previous years.

Comparison between Rainfall in Kharif and Rabi seasons of the years 1879-80 and 1878-79.

		KHARIF.							RABI.							TOTAL OF YEAR.	REMARKS.
		June.	July.	August.	September.	October.	November.	TOTAL.	December.	January.	February.	March.	April.	May.	TOTAL.		
		In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.		
Orissa	1879-80	8.23	13.27	18.96	9.19	5.14	0.21	50.00	1.45	0.05	1.80	0.00	1.40	6.61	11.31	61.31	This statement has been prepared from the monthly Irrigation Returns as published in the Calcutta Gazette.
	1878-79	3.43	8.77	11.53	0.36	4.51	3.05	37.65	0.45	0.00	0.05	1.40	0.00	8.09	9.99	47.64	
Average rainfall for 24 years		...	...	...	...	...	...	...	...	...	...	...	...	...	...	52.15
Midnapore	1879-80	2.98	11.03	5.12	3.77	1.58	0.00	30.07	0.21	0.07	2.61	0.47	0.95	0.87	11.18	41.25	
	1878-79	3.73	8.74	15.91	10.13	2.32	1.83	42.66	0.52	0.00	2.74	0.00	0.24	4.44	7.94	50.60	
Average rainfall for 9 years		...	...	...	...	...	...	...	...	...	...	...	...	...	...	56.81
Panchkooah	1879-80	3.09	5.00	6.02	7.20	3.44	0.00	26.35	0.00	0.00	4.20	0.70	3.55	6.07	14.52	41.07	
	1878-79	3.05	6.15	13.14	10.20	1.55	1.34	35.43	0.49	0.00	0.95	0.00	0.00	4.57	6.01	41.44	
Average rainfall for 9 years		...	...	...	...	...	...	...	...	...	...	...	...	...	...	52.92
Buxar	1879-80	5.62	15.73	7.99	17.85	3.81	0.00	51.00	0.00	0.00	2.06	0.00	0.00	0.66	2.72	53.73	
	1878-79	2.59	9.26	5.42	3.12	0.05	0.93	21.37	0.00	0.01	0.89	0.00	0.00	0.00	0.90	22.27	
Arrah	1879-80	7.14	7.97	10.56	16.37	5.21	0.00	47.25	0.00	0.25	2.39	0.00	0.03	0.60	3.27	50.59	
	1878-79	4.90	6.86	11.70	4.75	0.00	0.79	29.00	0.00	0.00	1.35	0.00	0.00	0.00	1.35	30.35	
Bankipore	1879-80	5.05	9.70	13.34	9.34	4.29	0.00	41.72	0.00	0.00	1.38	0.00	0.35	1.14	2.87	44.59	
	1878-79	1.21	10.83	15.19	4.37	0.00	0.90	32.50	0.00	0.00	1.05	0.00	0.00	0.00	1.05	33.55	

Statement showing the Total Traffic during 1879-80, as compared with 1878-79, on the Orissa, Midnapore, and Sone Canals.

NAME OF CANAL.	NUMBER OF MILES OPEN.		NUMBER OF BOATS, INCLUDING EMPTIES.		TONNAGE OF BOATS.		VALUE OF CARGO.		TOLLS.	
	1878-79.	1879-80.	1878-79.	1879-80.	1878-79.	1879-80.	1878-79.	1879-80.	1878-79.	1879-80.
<i>Orissa Circle.</i>										
Taldundah Canal	27	27	955	950	Tons.	Tons.	Rs.	Rs.	Rs.	Rs.
Machgong "					15,587	16,616	1,77,605	88,753	1,811	2,878
Kendrapara Canal, including Gobri Branch	54	54	7,686	5,560	59,629	46,654	32,00,501	23,15,584	37,879	35,482
High Level Canal, Section I.	83	83	2,574	2,328	36,323	24,745	5,32,048	2,48,885	13,064	8,250
Ditto Ditto II.	12½	12½	1,620	2,808	16,223	19,183	1,49,762	3,36,239	8,544	11,110
Ditto Ditto III.	6½	17	227	356	1,984	2,987	19,588	34,000	1,045	1,240
TOTAL	133	147½	14,042	11,500	129,646	110,185	40,79,504	30,23,461	62,343	59,220
<i>South-Western Circle.</i>										
Midnapore Canal	46	48	43,224	52,044	290,488	330,927	1,50,51,350	1,59,41,406	76,090	92,067
Hidgollee Tidal "	29	29	22,960	16,311	164,687	120,021	41,55,253	25,86,031	58,989	44,328
TOTAL	77	77	71,193	68,355	455,175	440,948	1,92,06,603	1,85,27,527	1,35,079	1,36,395
<i>Sone Circle.</i>										
Western Main Canal	22	22	425	516	3,620	5,290	2,58,210	3,29,077	1,168	1,567
Buxar Branch "	...	9½	...	...	...	...	...	...	...	...
Arrah "	65	65	2,593	3,727	28,084	33,101	13,14,252	20,72,942	9,153	11,899
Patna "	87	86	3,858	2,690	34,685	27,903	11,28,079	10,80,607	18,673	18,668
TOTAL	174	182½	6,876	6,942	66,389	66,290	26,98,541	34,82,626	28,994	27,334
GRAND TOTAL	384	407	92,111	86,797	651,210	617,419	2,59,84,648	2,50,33,614	2,26,416	2,23,140

Statement showing the Number of Boats, Class of Goods, Tonnage and Value of Cargoes, and Tolls levied on the Orissa Canals in 1879-80 as compared with 1878-79.

Statement showing the Number of Boats, Class of Goods, Tonnage and Value of Cargoes, and Tolls levied on the Midnapore Canals in 1879-80 as compared with 1878-79.

Statement showing the Number of Boats, Class of Goods, Tonnage and Value of Cargoes, and Tolls levied on the Sone Canals in 1879-80 as compared with 1878-79.

	NUMBER OF BOATS.		TONNAGE OF CARGO.		VALUE OF CARGO.		TOLLS.	
	1878-79.	1879-80.	1878-79.	1879-80.	1878-79.	1879-80.	1878-79.	1879-80.
	No.	No.	Tons.	Tons.	Rs.	Rs.	Rs.	Rs.
Articles of food	912	1,588	9,049	17,577	13,75,156	14,95,685	4,747	8,400
Stimulants	73	98	1,143	1,319	68,455	68,225	747	799
Clothing	711	58	591	405	2,19,725	52,200	316	21
Staples of manufacture	344	621	4,678	9,606	3,39,831	6,13,279	2,673	4,255
Building materials	431	556	7,383	7,792	1,68,826	30,272	2,884	2,344
Live-stock	...	...	...	...	...	...	...	...
Fuel	129	59	1,940	791	9,762	6,027	147	17
Cooking utensils and domestic implements	96	21	1,050	163	10,483	2,440	740	5
Miscellaneous	2,438	2,962	14,449	21,567	3,53,894	4,97,837	9,245	9,500
TOTAL	4,494	5,962	40,501	59,214	25,46,082	27,65,965	21,409	25,730
1879-80	{ More	1,469	...	18,713	...	2,19,863	...	4,240
	{ Less	...	...	...	...	...	...	...

PUBLIC WORKS DEPARTMENT FINANCE ACCOUNTS FOR THE YEAR 1879-80.
[Bengal Province.]

APPENDIX B.
Summary of Financial results of Productive Public Works for, and up to close of, 1879-80.

Irrigation Branch.]

	CAPITAL OUTLAY.										WORKING EXPENSES.			
	DURING YEAR.					TO END OF YEAR.					DURING YEAR.			
	Direct charges.					Direct charges.					Direct charges.			
	Ordinary.	Productive public works.	Total.	Indirect charges.	Grand Total.	Ordinary.	Productive public works.	Total.	Indirect charges.	Grand Total.	During year.	To end of year.	Direct charges.	Total.
PRODUCTIVE PUBLIC WORKS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1868-69	4,26,705	2,61,078	6,87,783	...	6,87,783	4,26,705	2,61,078	6,87,783	...	6,87,783	5,427	5,427	1,016	1,188
1869-70	...	1,42,19,599	1,42,19,599	...	1,42,19,599	4,26,705	1,42,19,599	1,46,46,304	...	1,46,46,304	57,785	57,785	4,909	49,694
1870-71	8,582	30,60,774	30,69,356	...	30,69,356	4,26,705	1,76,41,451	1,80,70,738	...	1,80,70,738	82,309	82,309	11,404	1,61,516
1871-72	2,42,932	33,15,572	35,58,504	...	35,58,504	6,72,238	2,06,37,093	2,13,09,331	...	2,13,09,331	94,431	94,431	18,854	3,42,507
1872-73	4,352	44,74,193	44,78,545	...	44,78,545	6,72,238	2,54,31,216	2,61,03,454	...	2,61,03,454	1,02,931	1,02,931	3,24,210	3,52,814
1873-74	1,03,998	51,26,087	52,30,085	...	52,30,085	7,80,408	3,05,57,368	3,13,37,776	...	3,13,37,776	1,47,688	1,47,688	15,525	3,06,481
1874-75	8,729	46,06,547	46,15,276	...	46,15,276	7,80,408	3,52,53,850	3,60,34,258	...	3,60,34,258	2,17,533	2,17,533	3,61,388	3,79,886
1875-76	14,084	39,61,544	39,75,628	...	39,75,628	7,80,408	3,92,15,394	4,00,00,000	...	4,00,00,000	3,30,434	3,30,434	20,006	5,55,496
1876-77	2,717	32,80,854	32,83,571	...	32,83,571	7,80,408	4,24,36,248	4,32,16,656	...	4,32,16,656	9,37,701	9,37,701	5,29,490	6,27,049
1877-78	...	23,74,353	23,74,353	...	23,74,353	7,72,817	4,48,70,600	4,56,43,417	...	4,56,43,417	4,94,772	4,94,772	7,02,557	7,39,393
1878-79	...	25,44,393	25,44,393	...	25,44,393	7,72,817	4,74,14,903	4,81,87,810	...	4,81,87,810	8,51,153	8,51,153	44,529	8,50,139
1879-80	...	16,15,601	16,15,601	...	16,15,601	7,72,817	4,90,30,594	4,98,03,411	...	4,98,03,411	10,94,112	10,94,112	53,966	9,74,464

NET RESULTS, INCLUDING INTEREST.

	WORKING EXPENSES.					NET RESULTS, EXCLUDING INTEREST.					CHARGES FOR INTEREST.					DIFFERENCE BETWEEN NET REVENUE AND CHARGES FOR INTEREST.				
	TO END OF YEAR.					TO END OF YEAR.					TO END OF YEAR.					TO END OF YEAR.				
	Direct charges.					Direct charges.					Direct charges.					Direct charges.				
	During year.	To end of year.	During year.	To end of year.	During year.	During year.	To end of year.	During year.	To end of year.	During year.	During year.	To end of year.	During year.	To end of year.	During year.	During year.	To end of year.	During year.	To end of year.	During year.
PRODUCTIVE PUBLIC WORKS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1868-69	1,016	1,188	4,229	4,229	4,229	4,229	4,229	4,229	4,229	4,229	4,229	4,229	4,229	4,229	4,229	4,229	4,229	4,229	4,229	4,229
1869-70	44,747	49,828	3,718	3,718	3,718	3,718	3,718	3,718	3,718	3,718	3,718	3,718	3,718	3,718	3,718	3,718	3,718	3,718	3,718	3,718
1870-71	1,94,859	2,11,344	7,957	7,957	7,957	7,957	7,957	7,957	7,957	7,957	7,957	7,957	7,957	7,957	7,957	7,957	7,957	7,957	7,957	7,957
1871-72	5,18,502	5,33,851	2,44,046	2,44,046	2,44,046	2,44,046	2,44,046	2,44,046	2,44,046	2,44,046	2,44,046	2,44,046	2,44,046	2,44,046	2,44,046	2,44,046	2,44,046	2,44,046	2,44,046	2,44,046
1872-73	8,53,712	9,06,665	2,40,883	2,40,883	2,40,883	2,40,883	2,40,883	2,40,883	2,40,883	2,40,883	2,40,883	2,40,883	2,40,883	2,40,883	2,40,883	2,40,883	2,40,883	2,40,883	2,40,883	2,40,883
1873-74	11,45,698	12,13,146	1,58,798	1,58,798	1,58,798	1,58,798	1,58,798	1,58,798	1,58,798	1,58,798	1,58,798	1,58,798	1,58,798	1,58,798	1,58,798	1,58,798	1,58,798	1,58,798	1,58,798	1,58,798
1874-75	15,05,636	15,93,082	1,62,293	1,62,293	1,62,293	1,62,293	1,62,293	1,62,293	1,62,293	1,62,293	1,62,293	1,62,293	1,62,293	1,62,293	1,62,293	1,62,293	1,62,293	1,62,293	1,62,293	1,62,293
1875-76	20,31,546	21,48,538	1,13,982	1,13,982	1,13,982	1,13,982	1,13,982	1,13,982	1,13,982	1,13,982	1,13,982	1,13,982	1,13,982	1,13,982	1,13,982	1,13,982	1,13,982	1,13,982	1,13,982	1,13,982
1876-77	26,32,506	27,75,577	1,43,071	1,43,071	1,43,071	1,43,071	1,43,071	1,43,071	1,43,071	1,43,071	1,43,071	1,43,071	1,43,071	1,43,071	1,43,071	1,43,071	1,43,071	1,43,071	1,43,071	1,43,071
1877-78	33,35,863	33,14,940	1,73,577	1,73,577	1,73,577	1,73,577	1,73,577	1,73,577	1,73,577	1,73,577	1,73,577	1,73,577	1,73,577	1,73,577	1,73,577	1,73,577	1,73,577	1,73,577	1,73,577	1,73,577
1878-79	41,40,973	43,65,079	2,24,106	2,24,106	2,24,106	2,24,106	2,24,106	2,24,106	2,24,106	2,24,106	2,24,106	2,24,106	2,24,106	2,24,106	2,24,106	2,24,106	2,24,106	2,24,106	2,24,106	2,24,106
1879-80	50,61,471	53,30,545	1,19,648	1,19,648	1,19,648	1,19,648	1,19,648	1,19,648	1,19,648	1,19,648	1,19,648	1,19,648	1,19,648	1,19,648	1,19,648	1,19,648	1,19,648	1,19,648	1,19,648	1,19,648

(a) There is no indirect or increased land revenue due to irrigation works in Bengal as, owing to the system of land settlement in existence, the land revenue cannot be influenced by irrigation or other works of public improvement.

Fort William,
The 26th August 1880.

I. P. WESTMORLAND, Major, R.E.,
Examiner of P. W. Accounts, Bengal.